DINOSAURS!

•DISCOVER THE GIANTS OF THE PREHISTORIC WORLD•

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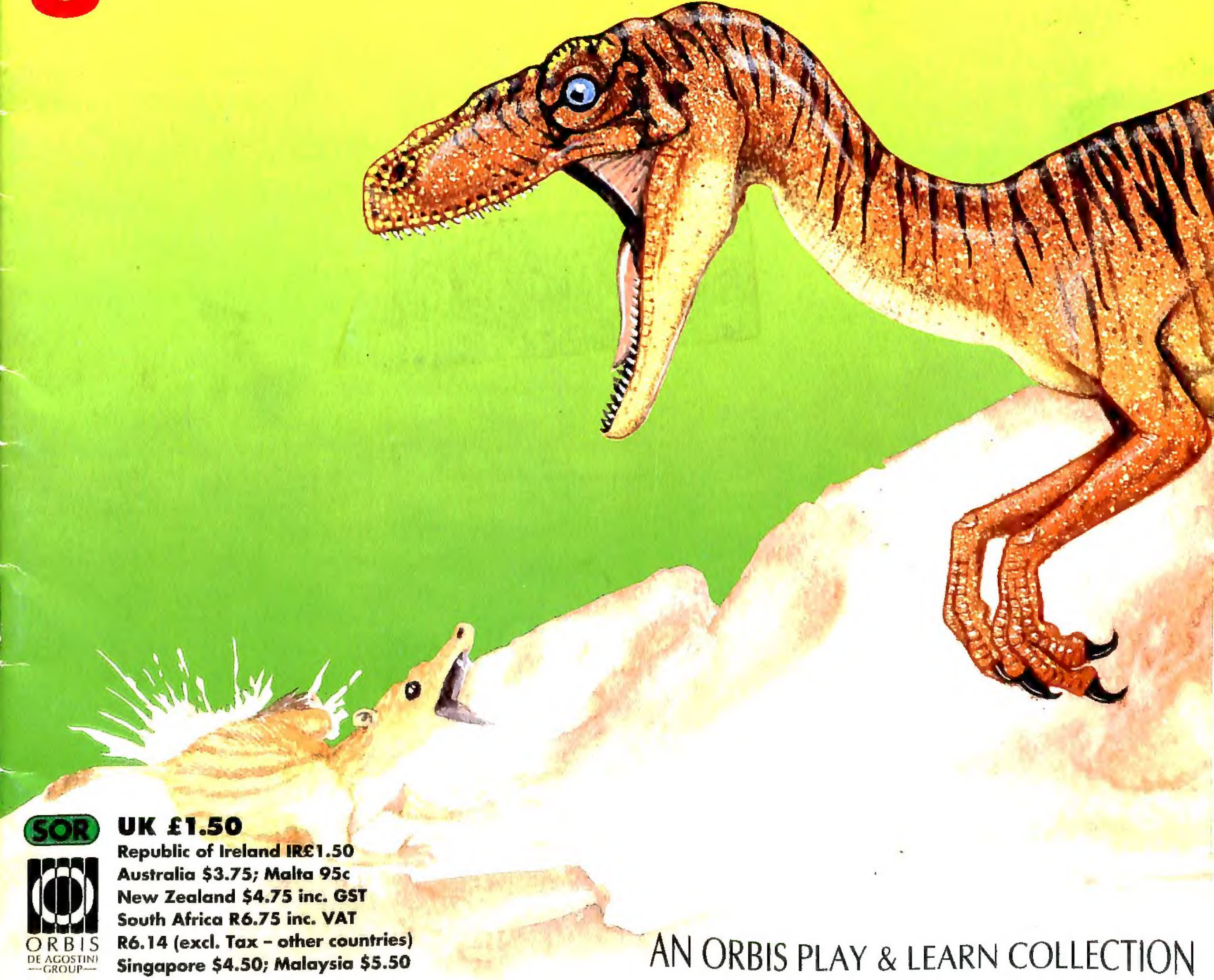

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DINOSAURS!

• DISCOVER THE GIANTS OF THE PREHISTORIC WORLD •

IDENTIKIT

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HOW TO ASSEMBLE YOUR MODEL

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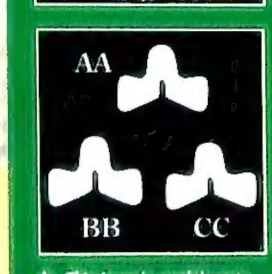
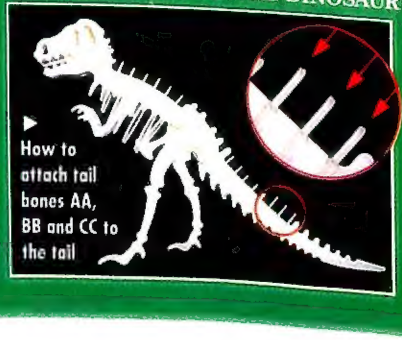
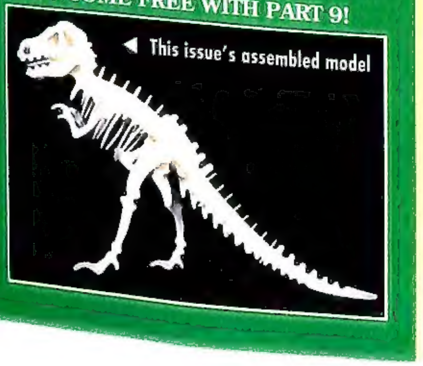
Push tail bone AA (the largest) into the highest open slot in the tail. Push tail bone BB (the next largest) into the next open in the tail. Push tail bone CC (the smallest) into the last open slot in the tail.

THE FIRST PARTS OF THE DINOSAUR BODY COME FREE WITH PART 9!



▲ This issue's model parts


▶ How to attach tail bones AA, BB and CC to the tail


◀ This issue's assembled model

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DINOSAURS! is published by
Orbis Publishing Ltd
Griffin House
161 Hammersmith Rd
London W6 8SD

© 1993 Orbis Publishing

N8 93 04 29
Printed in Italy by Officine
Grafiche De Agostini, Novara

PICTURE CREDITS: Natural History Museum: 184 (TR), (BR), 185; NHPA: 171 (T), 184 (BL): Pinsharp 3-D Graphics: 180, 181: Photo courtesy of Museum of the Rockies 186 (BL). **ARTWORK:** Front Cover: Graham Rosewarne; 192 (TL); Mike Dorey: 182, 183, 188, 189; John Frances/ Bernard Thornton Associates: 191 Kingfisher: 170 (B), 172, 173 (T), 174 (C), (B), 175, 192 (BL), (R); Neil Lloyd: 174 (TR), 176, 177, Deborah Mansfield: 170 (T); Deirdre McHale: Back Cover; Andrew Robinson: 173 (B); Graham Rosewarne: 169, 171 (B), 178, 179, 186 (TR), 187.

DEINONYCHUS

Deinonychus was far from being one of the largest dinosaurs, but it was one of the most skilful hunters.

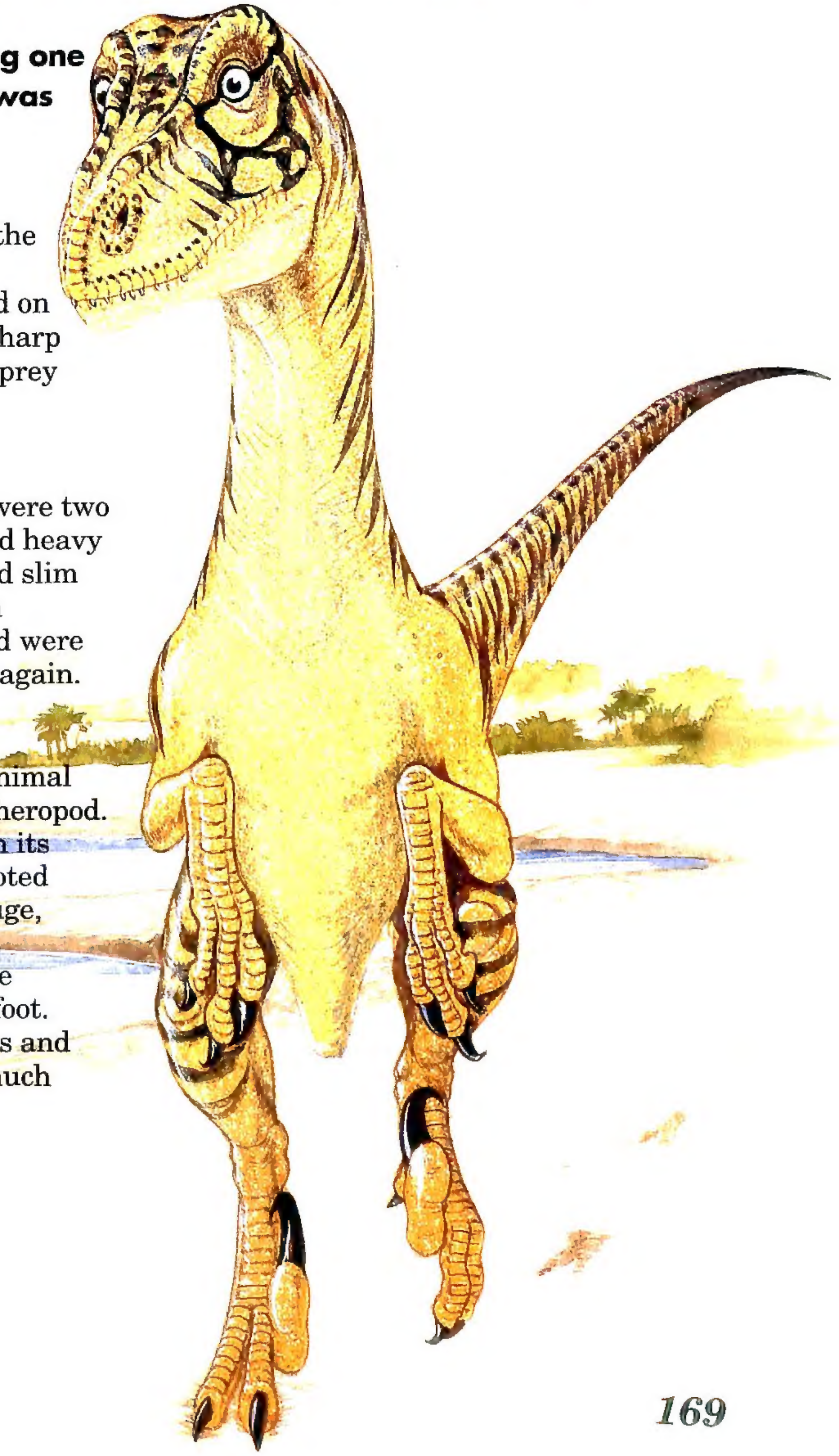
Deinonychus was one of the thugs of the dinosaur world. It always walked on its back legs and was armed with sharp claws and teeth that could rip into prey with alarming ease.

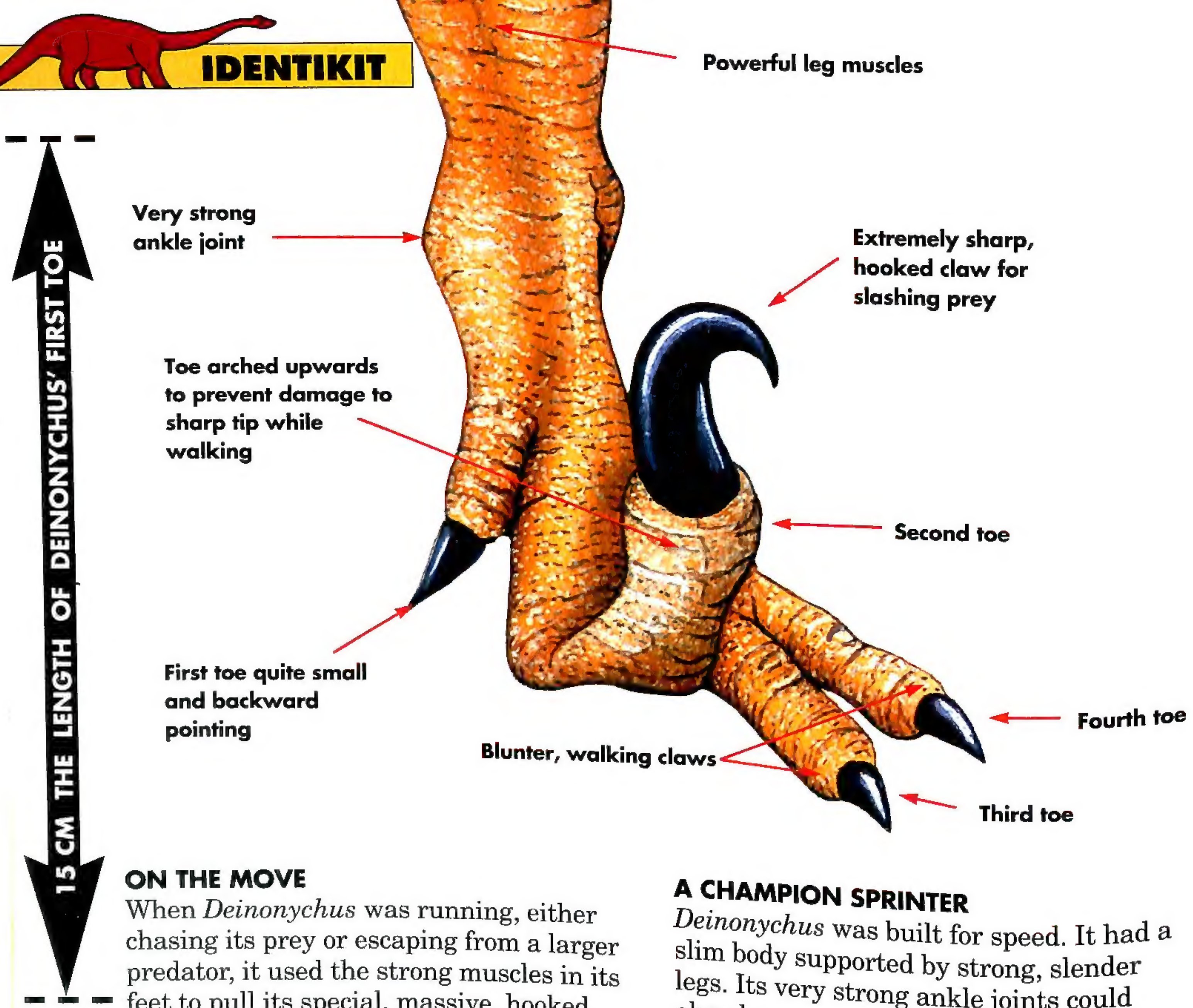
SECOND THOUGHTS

Until 1964, experts thought there were two separate types of theropod – big and heavy like *Tyrannosaurus rex* or small and slim like *Velociraptor*. Then, in southern Montana, USA, fossils of a theropod were found that made the experts think again.

SMALL AND FAST

The fossils they found were of an animal that had features of both types of theropod. Like all bipeds, it always walked on its back legs. It was small and fleet-footed with very special weapons – two huge, wickedly curved and pointed claws. *Deinonychus* carried these awesome weapons on the second toe of each foot. They were as long as carving knives and just as sharp. The other toes had much smaller claws.




Powerful leg muscles
Very strong ankle joint
Extremely sharp, hooked claw for slashing prey
Toe arched upwards to prevent damage to sharp tip while walking
Second toe
First toe quite small and backward pointing
Fourth toe
Blunter, walking claws
Third toe
15 CM THE LENGTH OF DEINONYCHUS' FIRST TOE

ON THE MOVE

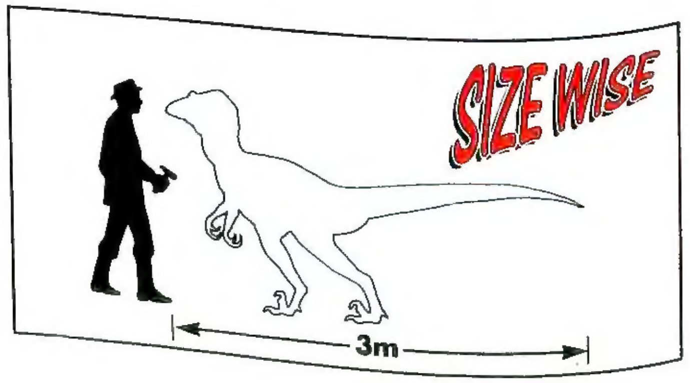
When *Deinonychus* was running, either chasing its prey or escaping from a larger predator, it used the strong muscles in its feet to pull its special, massive, hooked claws up, away from the ground. This protected them from damage. Its other claws were smaller and blunter and were used for gripping the ground and balance.

A CHAMPION SPRINTER

Deinonychus was built for speed. It had a slim body supported by strong, slender legs. Its very strong ankle joints could absorb enormous amounts of pressure when it ran flat out. *Deinonychus'* skull had holes in the bone and scientists think that its head was quite light. A solid bone skull would have been very heavy. They think it could run at 40km/h when it had to – that's faster than an Olympic sprinter.

MONSTER FACTS

- **NAME:** *Deinonychus* (die-no-nike-us) means 'terrible claw'
- **SIZE:** 3m long and 2m high
- **FOOD:** meat, especially the flesh of plant-eating dinosaurs
- **LIVED:** around 115 million years ago in the Cretaceous Period in North America



These Cape hunting dogs run in packs, just as ***Deinonychus*** did millions of years ago.

A PACK OF KILLERS

Deinonychus hunted in packs, just like the wild dogs that hunt prey on the African plains do today. It probably prowled around herds of *Tenontosaurus* and other giant plant-eaters. It kept a watchful eye out for young or infirm members of the herd that strayed close to where it was waiting. Then *Deinonychus* attacked. It used one claw to cling on to the victim, and ripped into its soft underbelly with the other. Next, *Deinonychus'* teeth went into action. They were sharp and curved backwards, making it impossible for the victim to wrench itself free.

IT'S A FACT

A BONE-BREAKING KICK

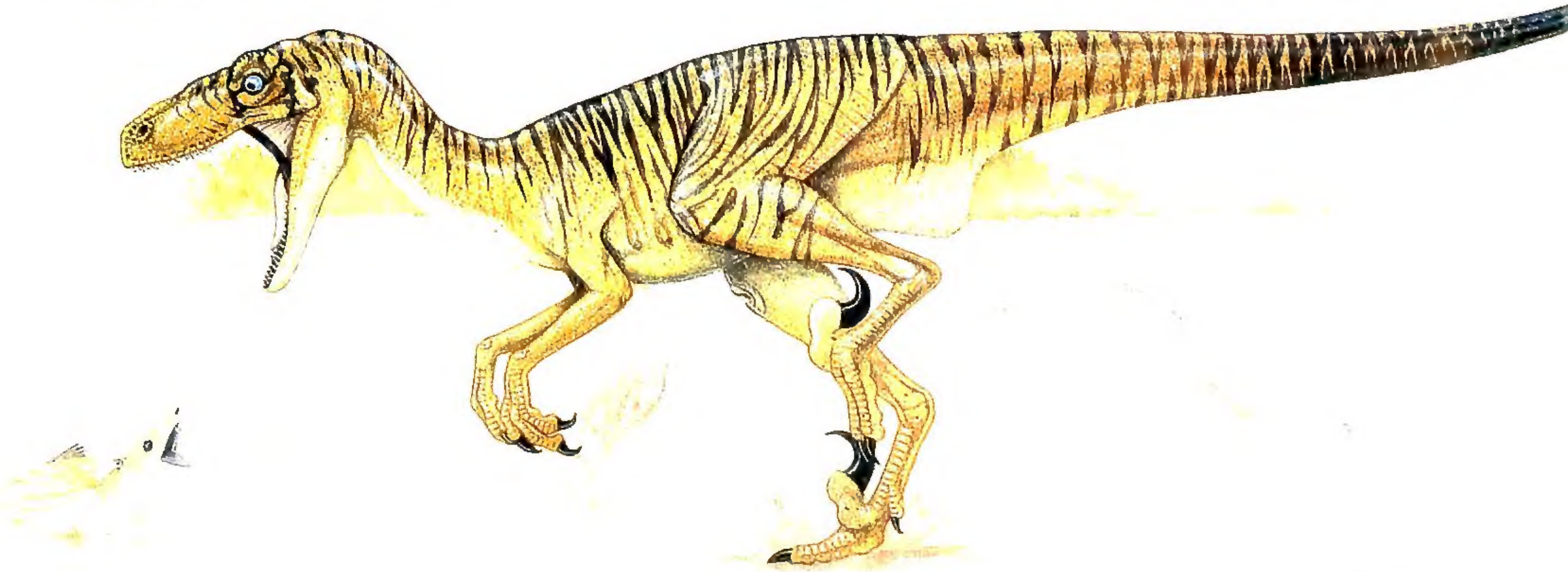
Deinonychus' kick was so strong that it could break its own toe. We know this because a fossil bone has been found that had been fractured and then healed. Scientists think that the dinosaur may have crippled itself as it kicked out at its prey.

A SPECIAL TAIL

Deinonychus had bony rods in its tail. These made it quite stiff. When the tail was held outstretched, it helped *Deinonychus* to balance itself as it sprinted across the land. It may also have used its tail as a sort of rudder, to help it zig-zag through the rocky landscape at top speed.

SHARP SIGHTED

When experts studied *Deinonychus'* skull, they found it had large eye sockets. This made them think that the animal had eagle-sharp eyesight – perfect for spotting a likely victim from some distance away.



HYLAEOSAURUS

One swing from *Hylaeosaurus'* spiked tail was enough to stun all but the mightiest dinosaurs.

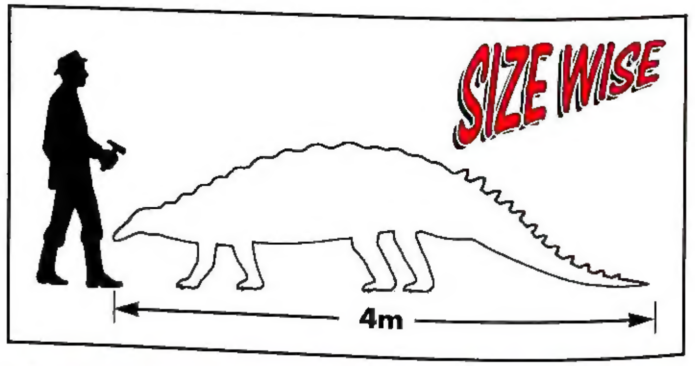
Hylaeosaurus was one of the armoured tanks of the prehistoric world. It belongs to a group of dinosaurs known as the ankylosaurs. It was 4m long from the tip of its nose to the end of its tail. That's as long as two cars parked bumper to bumper.

DR MANTELL'S DISCOVERY

The first *Hylaeosaurus* remains to be found were dug up by Gideon Mantell in 1832. The fossils are entombed in a slab of limestone that can still be seen in London's British Museum.

A GOOD GUESS

Only the front part of the dinosaur was found. Scientists had to guess how the legs and body armour looked, but they are pretty certain that it looked like a long lizard with a cloak of sharply spiked armour running from its neck right down to the tip of its tail.

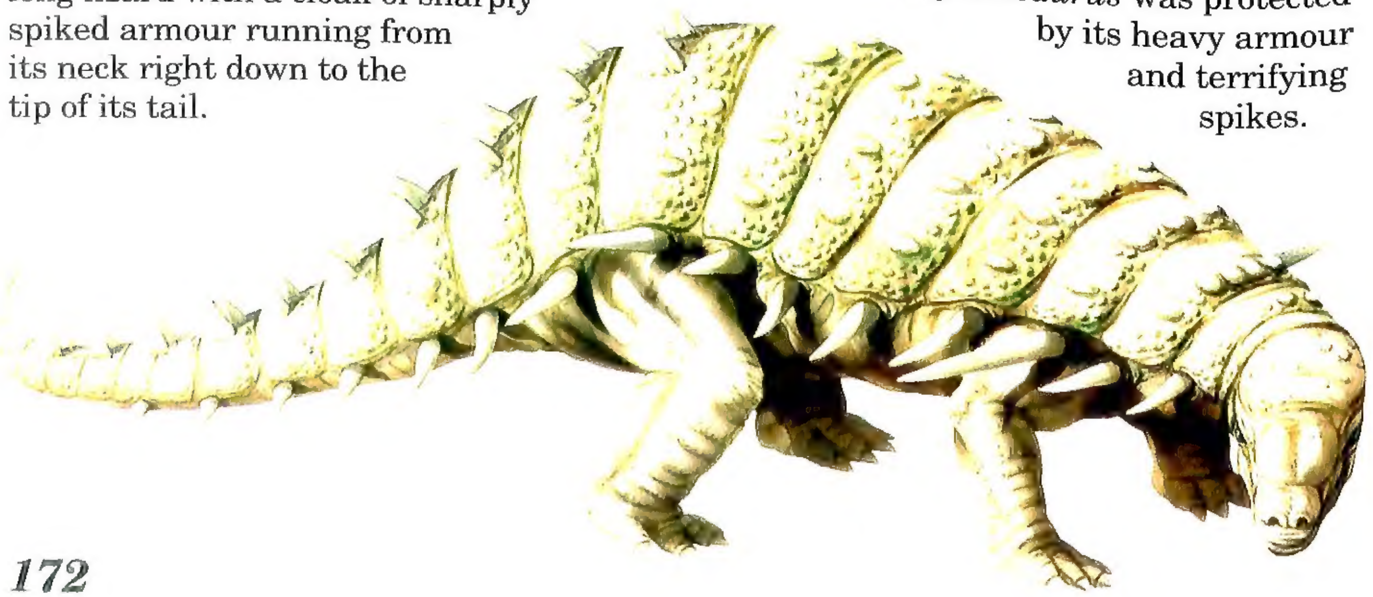


MONSTER FACTS

- **NAME:** *Hylaeosaurus* (hi-lee-oh-saw-rus) means 'woodland reptile'
- **SIZE:** 4m long and 1.8m high
- **FOOD:** plants
- **LIVED:** about 130 million years ago in the Early Cretaceous Period in southern England

ARMOUR PLATING

Hylaeosaurus was a slow-moving plant-eater that nibbled ferns and other green plants for its food. If it was attacked, *Hylaeosaurus* was protected by its heavy armour and terrifying spikes.



TENONTOSAURUS

***Tenontosaurus* was a bulky, powerful plant-eater that weighed about the same as a large car.**

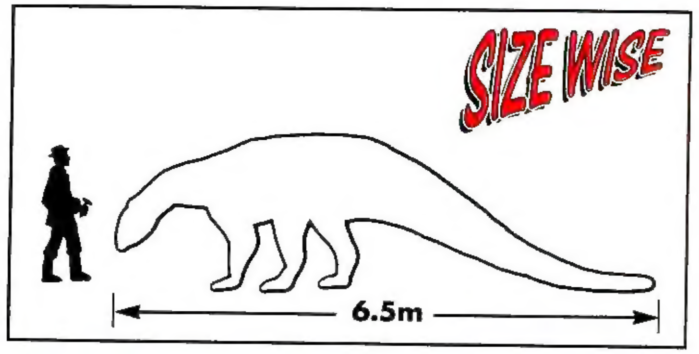
Tenontosaurus was about the same size as a double-decker bus. It had long, powerful limbs and a parrot-like beaked mouth.

TEN FINGERS, EIGHT TOES

A bulky dinosaur, *Tenontosaurus* could walk on all-fours or pick its way across the landscape on its hind legs. At the end of its front limbs were stocky hands with five fingers on each. *Tenontosaurus* balanced on the four long toes on each back foot when it stretched into the tree tops for a mouthful of leaves or twigs. When it ran, it gripped the ground with its toes, and raised its long, wide tail to balance the weight of its heavy chest and bulging belly.

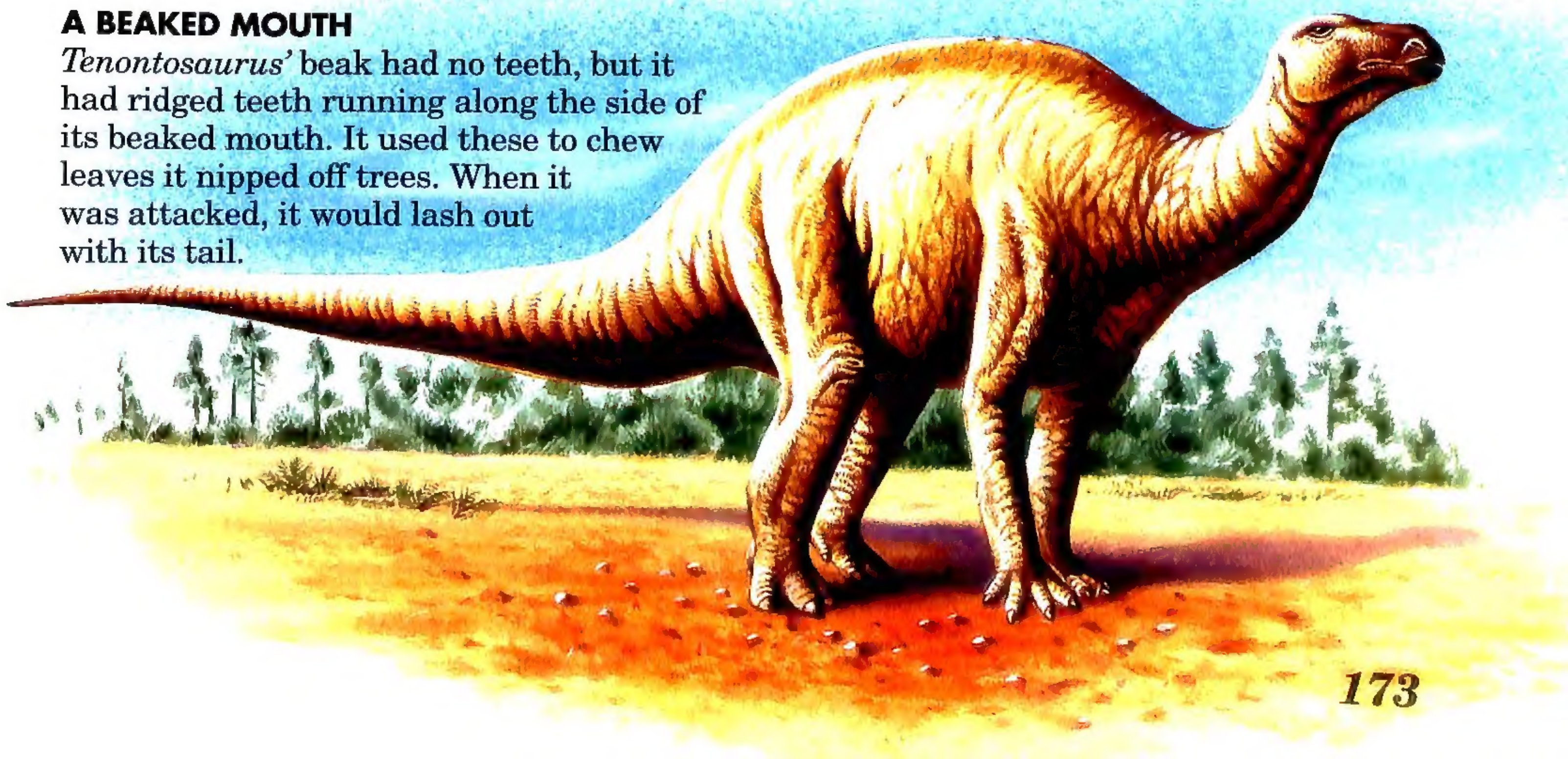
A BEAKED MOUTH

Tenontosaurus' beak had no teeth, but it had ridged teeth running along the side of its beaked mouth. It used these to chew leaves it nipped off trees. When it was attacked, it would lash out with its tail.



MONSTER FACTS

- **NAME:** *Tenontosaurus* (ten-on-tow-saw-rus) means 'sinew lizard'
- **SIZE:** 6.5m long
- **FOOD:** plants
- **LIVED:** 110 million years ago in the Middle Cretaceous Period in North America



Rulers of the waves

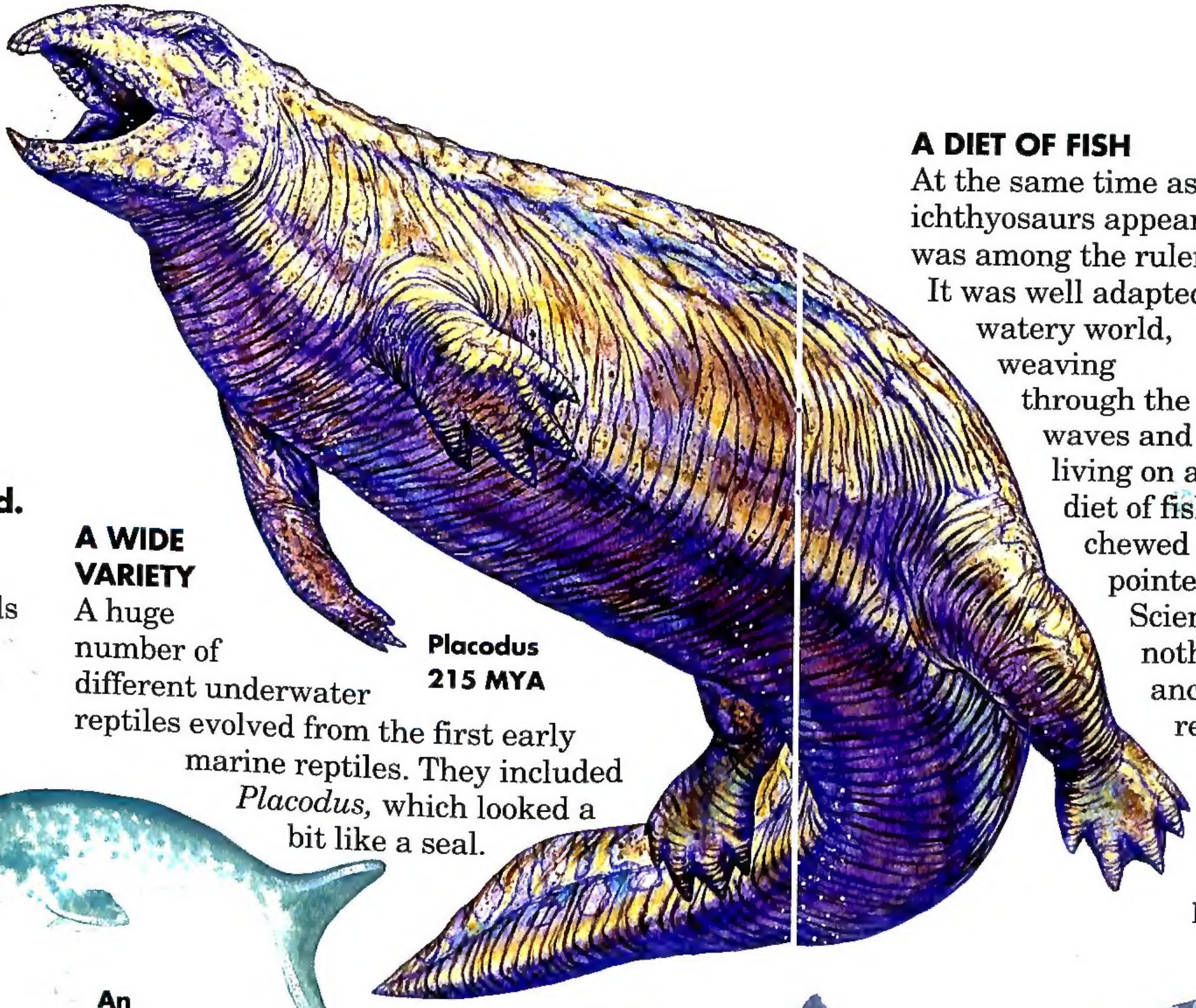
While dinosaurs roamed the Earth, the seas were ruled by some of the most ferocious reptiles that ever lived.

There was life in the sea hundreds of millions of years before dinosaurs roamed the Earth. Jellyfish and starfish appeared 600 million years ago. Millions of years later, the first fish appeared along with animals that could live both on land and in water. Animals that can do this today are called amphibians.

An ichthyosaur
210 MYA

BREATHING AIR

Scientists think that reptiles evolved from these amphibians. One of the earliest reptiles was *Hylonomus*, which took to life on the land. Others took to the sea. All reptiles must breathe air. Sea reptiles had to come to the surface to take in air. Some came ashore to lay eggs.



Placodus
215 MYA

A WIDE VARIETY

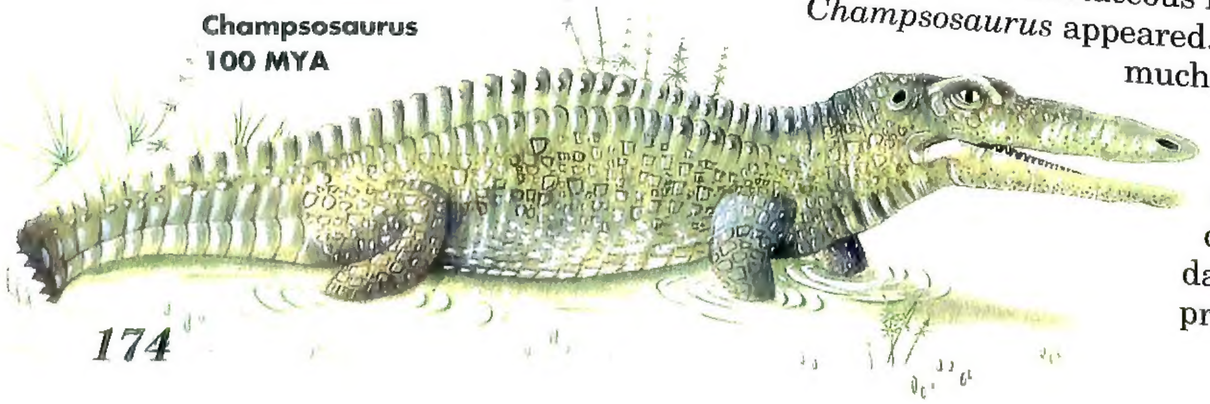
A huge number of different underwater reptiles evolved from the first early marine reptiles. They included *Placodus*, which looked a bit like a seal.

LAST MEALS

The ichthyosaurs appeared during the Late Triassic Period. Although ichthyosaurs looked rather like today's dolphins, they were reptiles, not mammals. We know they ate fish and cuttle fish because the remains of the last meals some of them ate have been found inside their fossils.

SEA-GOING HUNTER

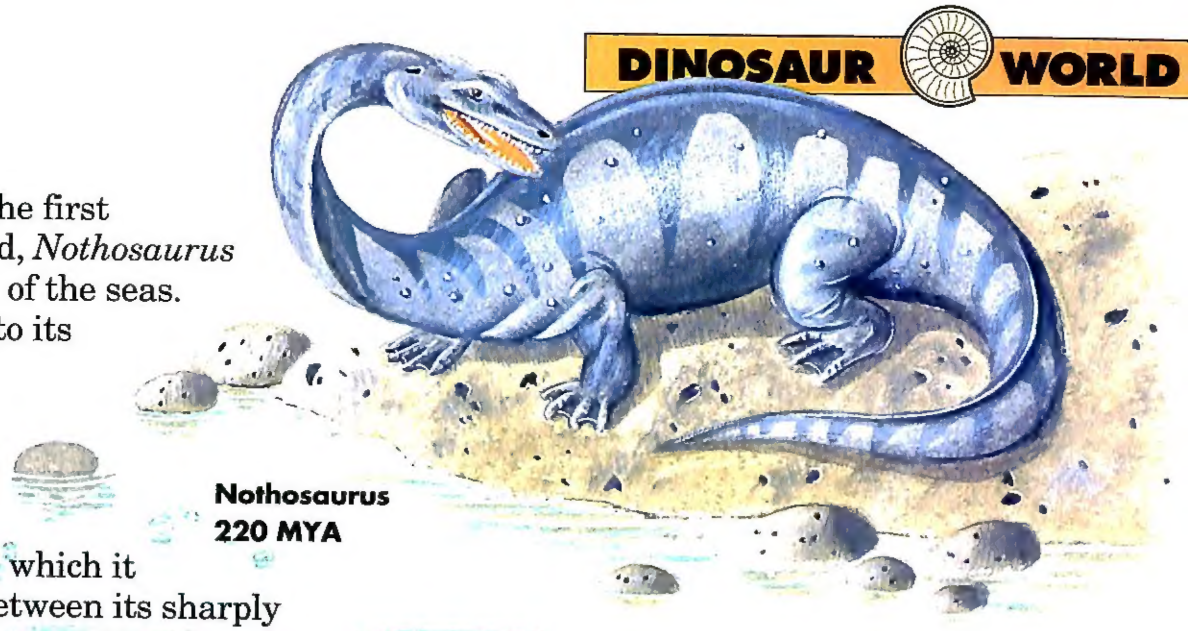
In the Middle Cretaceous Period, *Champsosaurus* appeared. It looked very much like a modern-day crocodile and was just as deadly and dangerous a predator.



Champsosaurus
100 MYA

A DIET OF FISH

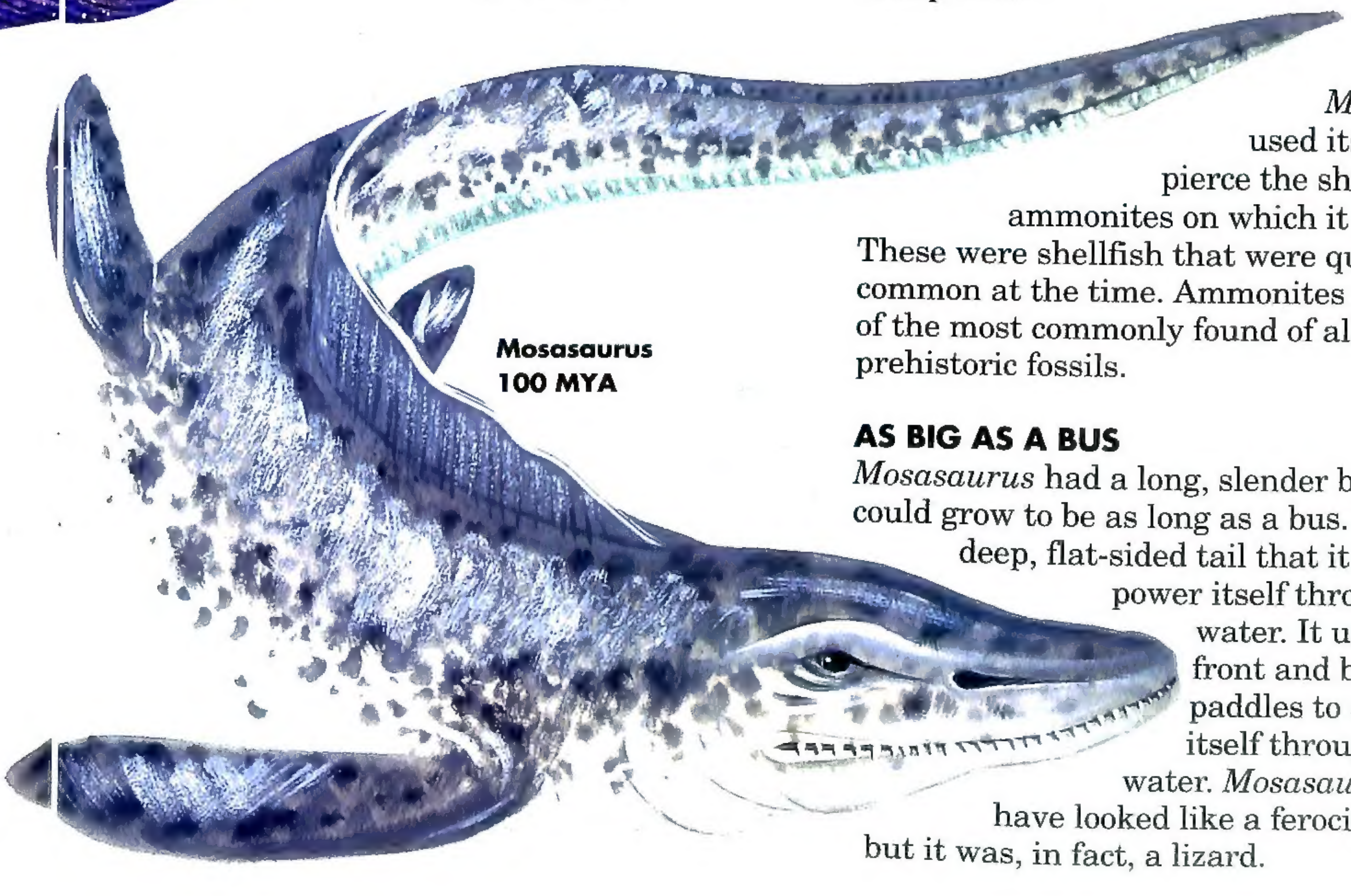
At the same time as the first ichthyosaurs appeared, *Nothosaurus* was among the rulers of the seas. It was well adapted to its watery world, weaving through the waves and living on a diet of fish, which it chewed between its sharply pointed, curved teeth. Scientists think that nothosaurs were the ancestors of a group of reptiles that dominated the Jurassic seas as early as 170 million years ago – the plesiosaurs and pliosaurs.



Nothosaurus
220 MYA

POWERFUL JAWS

A much later descendant of the early amphibians was *Mosasaurus*. It appeared after the ichthyosaurs had died out, during the Cretaceous Period. It swam in the prehistoric seas around 100 million years ago. Its huge, powerful jaws were as long as a broomstick and filled with wickedly sharp teeth.



Mosasaurus
100 MYA

Mosasaurus used its teeth to pierce the shells of the ammonites on which it fed. These were shellfish that were quite common at the time. Ammonites are one of the most commonly found of all prehistoric fossils.

AS BIG AS A BUS

Mosasaurus had a long, slender body that could grow to be as long as a bus. It had a deep, flat-sided tail that it used to power itself through the water. It used its front and back paddles to steer itself through the water. *Mosasaurus* may have looked like a ferocious fish, but it was, in fact, a lizard.

Paddling along

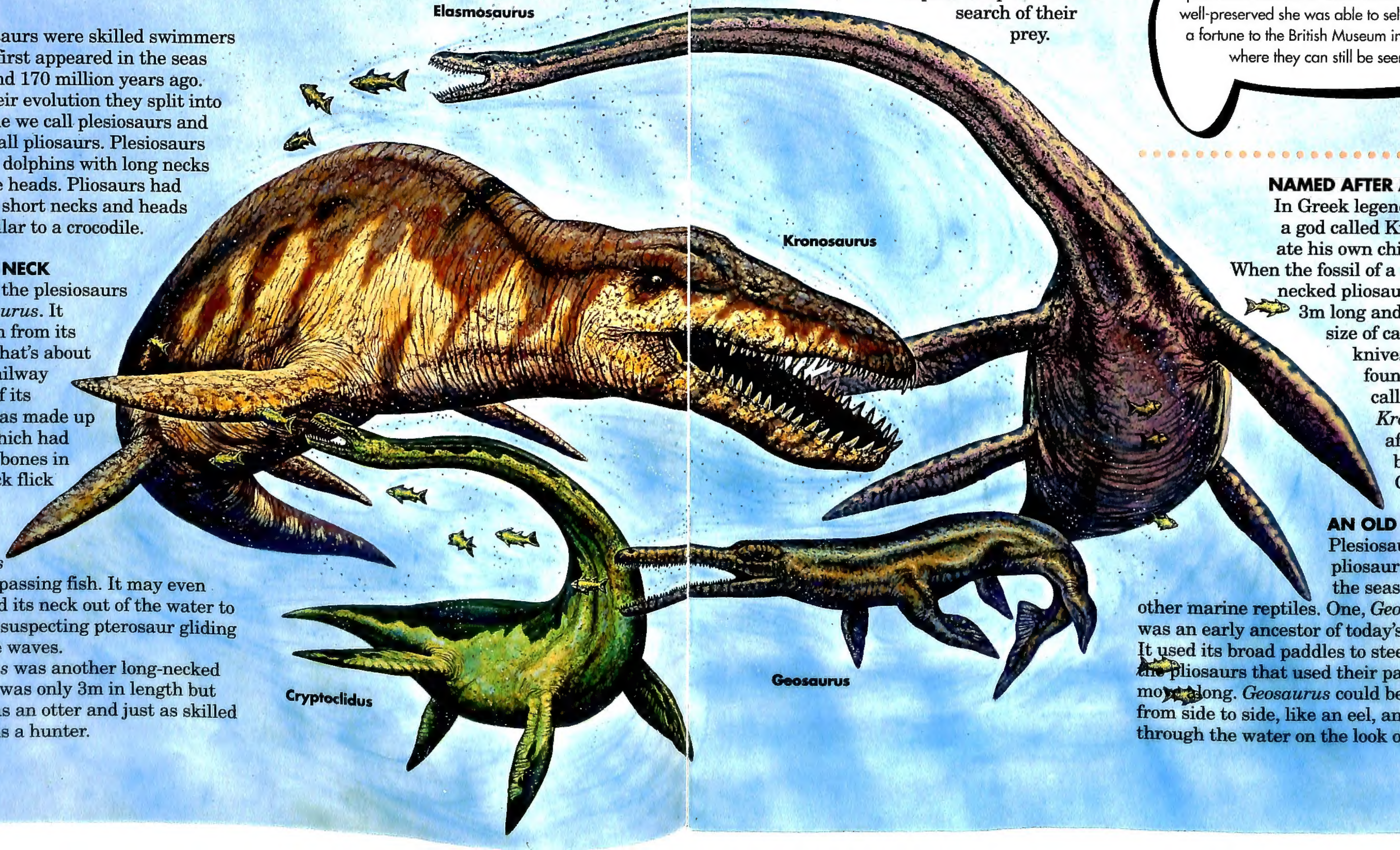
Plesiosaurs and pliosaurs were once described as 'snakes strung through the body of a turtle'. Among the creatures they shared the seas with was *Geosaurus*, an early ancestor of today's crocodiles.

Plesiosaurs were skilled swimmers that first appeared in the seas around 170 million years ago. Early on in their evolution they split into two groups, one we call plesiosaurs and the other we call pliosaurs. Plesiosaurs looked like fat dolphins with long necks and snake-like heads. Pliosaurs had plump bodies, short necks and heads that were similar to a crocodile.

LONG IN THE NECK

The largest of the plesiosaurs was *Elasmosaurus*. It measured 15m from its head to tail. That's about as long as a railway engine. Half of its total length was made up by its neck, which had over 70 small bones in it. With a quick flick of this long, snake-like neck, *Elasmosaurus* could catch a passing fish. It may even have stretched its neck out of the water to snap at an unsuspecting pterosaur gliding just above the waves.

Cryptoclidus was another long-necked plesiosaur. It was only 3m in length but was as agile as an otter and just as skilled and dangerous a hunter.



KILLING COUSINS

Pliosaurs had shorter necks than the plesiosaurs. They looked like whales with gigantic jaws armed with deadly teeth. They fed on big fish and probably didn't hesitate to go for smaller sea reptiles that came within their range. They were perfectly suited to living in the water. Some pliosaurs could dive down to depths of up to 300m in search of their prey.

IT'S A FACT

FOSSILIZED FORTUNE

The first fossilized plesiosaurs were found in England more than 170 years ago. Between 1800 and 1820, Mary Anning, one of the first great fossil hunters, found some plesiosaur skeletons. These fossils were so well-preserved she was able to sell them for a fortune to the British Museum in London where they can still be seen.

NAMED AFTER A GOD

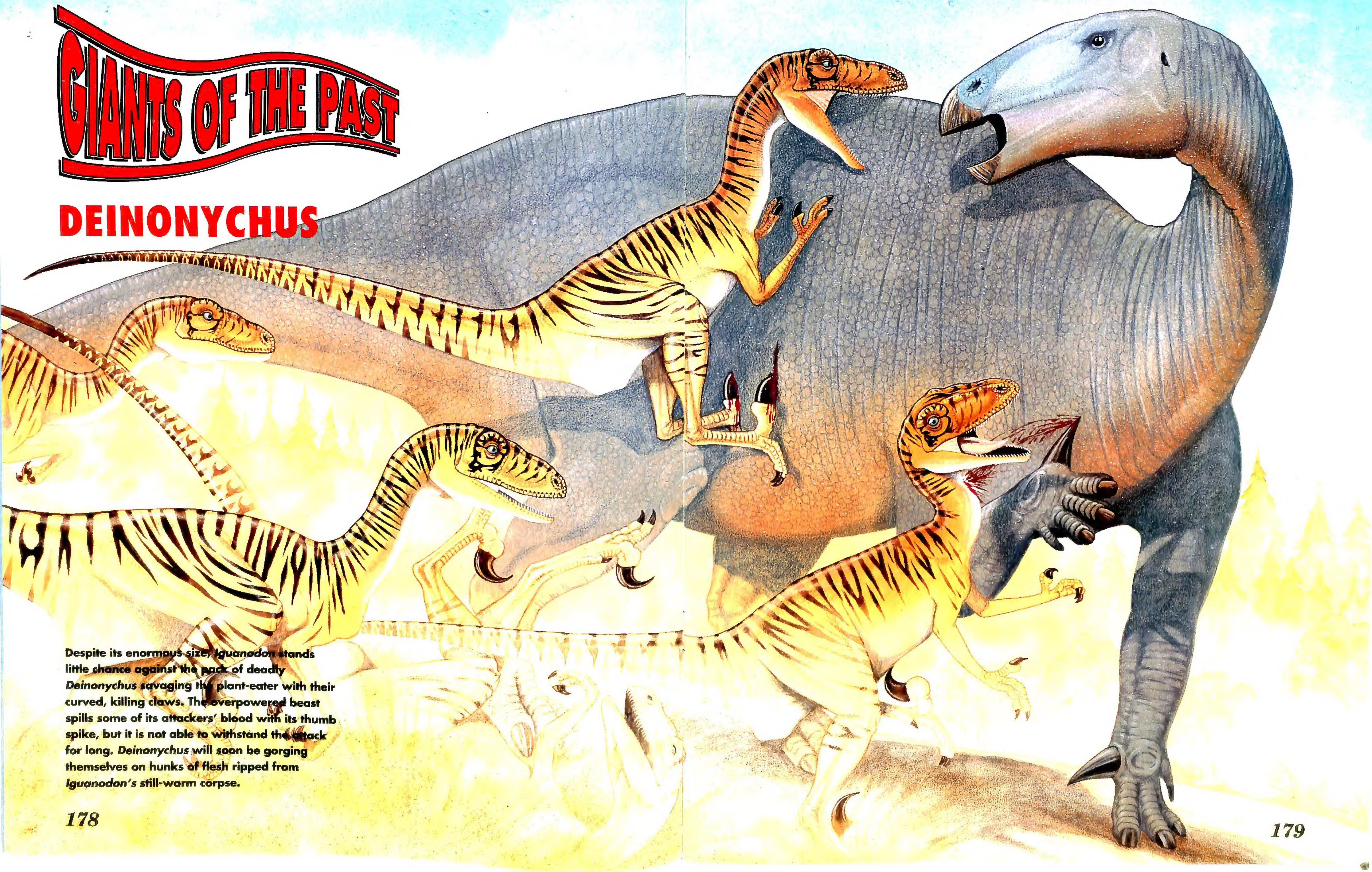
In Greek legend there was a god called Kronos who ate his own children. When the fossil of a short-necked pliosaur with jaws 3m long and teeth the size of carving knives was found, scientists called it *Kronosaurus* after the bloodthirsty Greek god.

AN OLD CROC

Plesiosaurs and pliosaurs shared the seas with many other marine reptiles. One, *Geosaurus*, was an early ancestor of today's crocodiles. It used its broad paddles to steer, unlike the pliosaurs that used their paddles to move along. *Geosaurus* could bend its body from side to side, like an eel, and it weaved through the water on the look out for fish.

GIANTS OF THE PAST

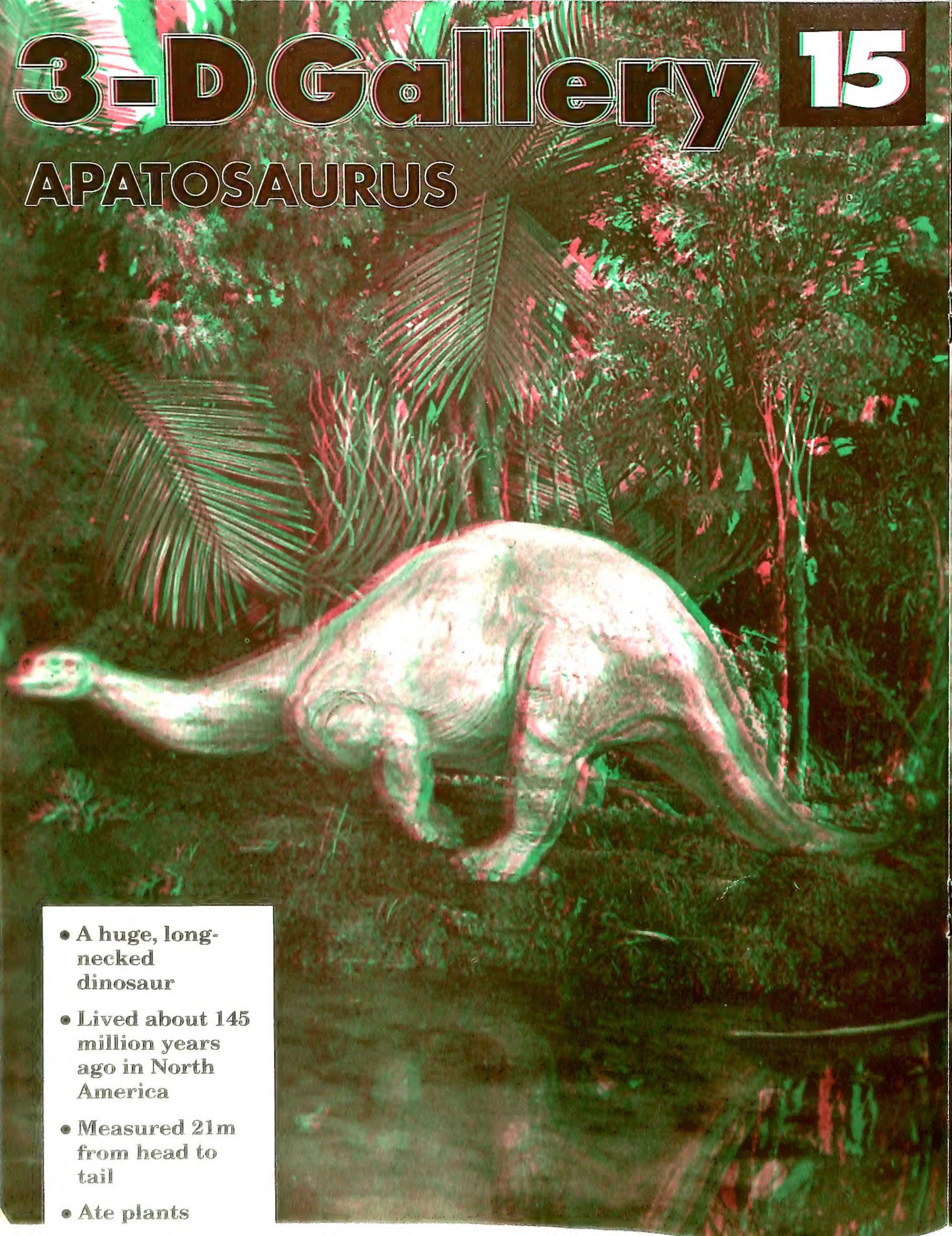
DEINONYCHUS



Despite its enormous size, *Iguanodon* stands little chance against the pack of deadly *Deinonychus* savaging the plant-eater with their curved, killing claws. The overpowered beast spills some of its attackers' blood with its thumb spike, but it is not able to withstand the attack for long. *Deinonychus* will soon be gorging themselves on hunks of flesh ripped from *Iguanodon's* still-warm corpse.

3-D Gallery 15

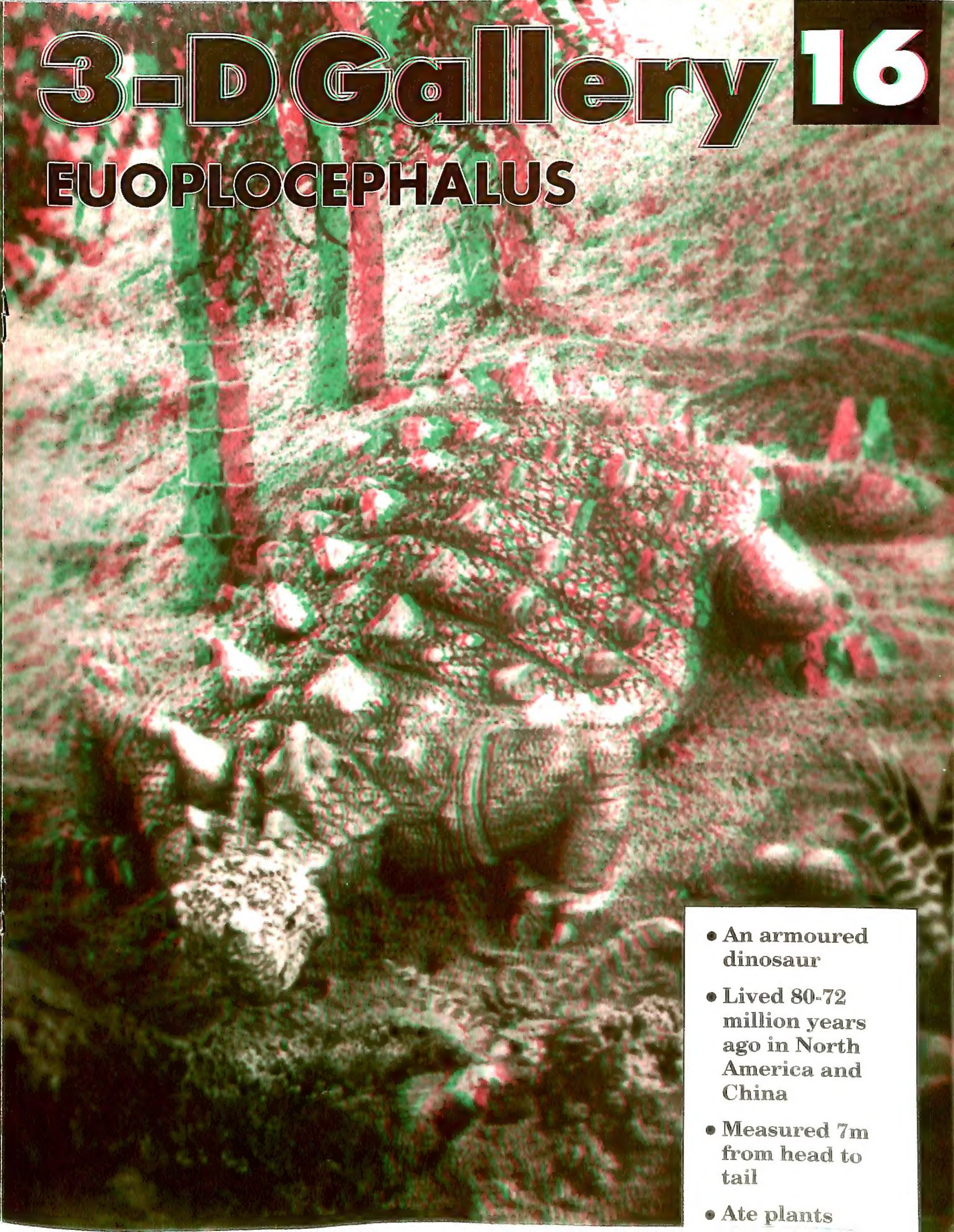
APATOSAURUS



- A huge, long-necked dinosaur
- Lived about 145 million years ago in North America
- Measured 21m from head to tail
- Ate plants

3-D Gallery 16

EUOPLOCEPHALUS



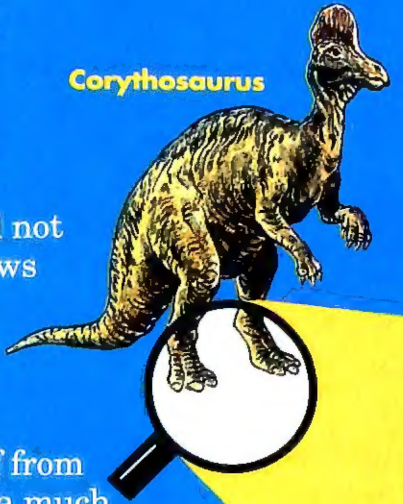
- An armoured dinosaur
- Lived 80-72 million years ago in North America and China
- Measured 7m from head to tail
- Ate plants

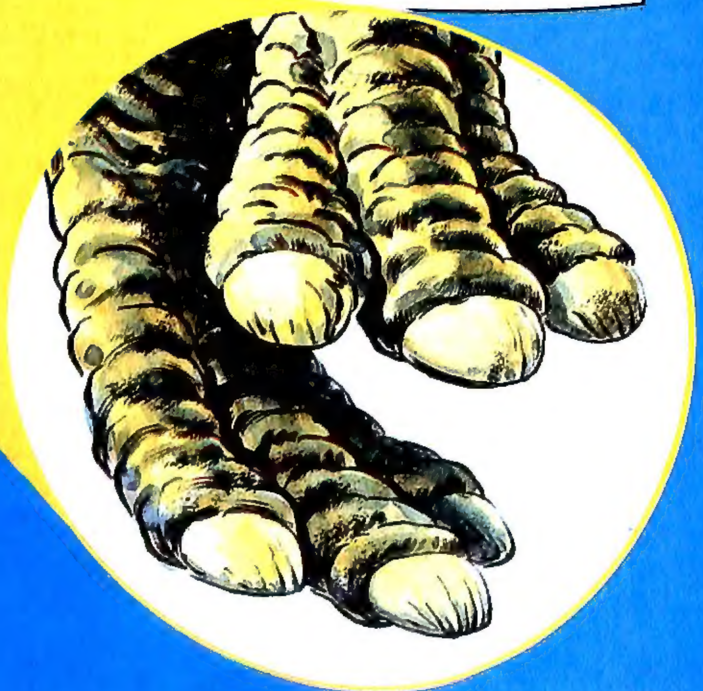
Feet first

Some dinosaurs had such big feet that their fossilized footprints were the size of paddling pools. Others had small feet armed with deadly claws.

Dinosaurs' feet were suited to their size and way of life. The large, plodding plant-eaters had to have feet that were broad and flat enough to support the enormous bulk of their bodies. Dinosaurs that were hunted by predators needed feet that were adapted for speed to make a fast get away.

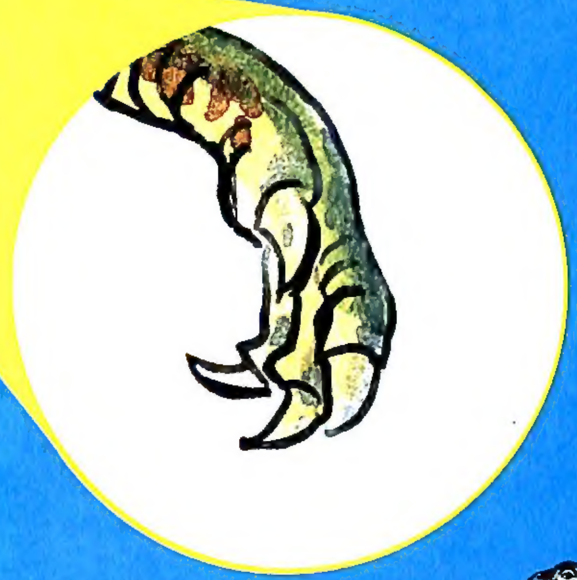
ON THE HOOF





Corythosaurus was a duckbilled dinosaur that lived in North America. It did not have sharp claws to fend off meat-eating predators. It protected itself from its enemies in a much less obvious way: it used its feet and ran. *Corythosaurus* relied on its speed to race away when it saw signs of danger. Fortunately, its feet were perfectly adapted for beating a hasty retreat. Instead of sharp claws, each of its strong, stubby toes ended in a broad bone hoof. These special hooves helped it to balance and grip the ground as it raced away from predators to safety.

LONG TOES

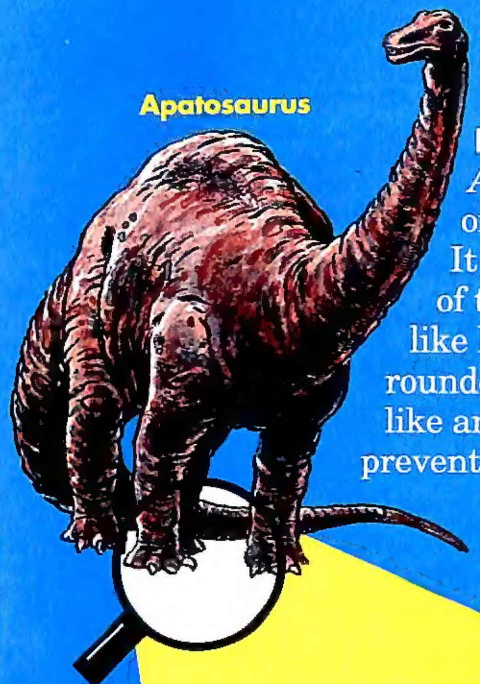


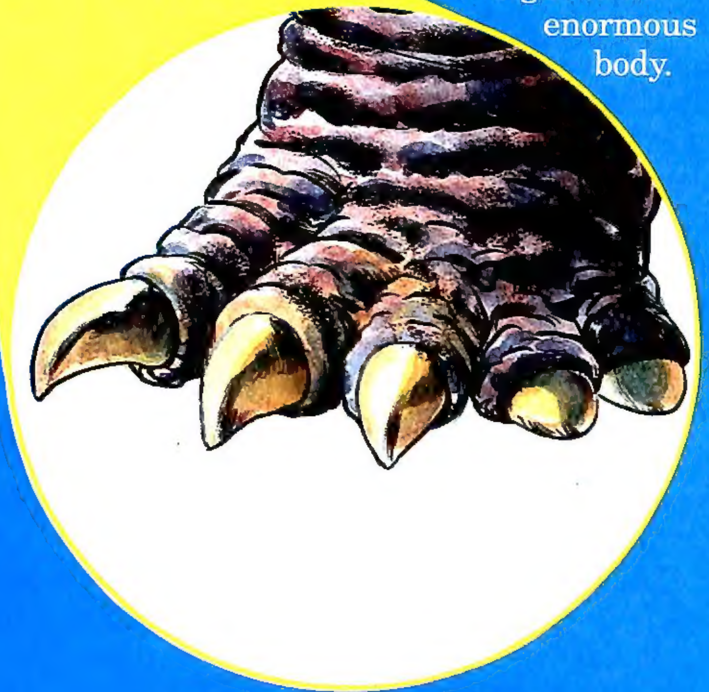
When scientists looked at the first fossils of *Hypsilophodon*, they thought they were the remains of a prehistoric bird. Its toes were so long that some experts thought their owner used them to perch in trees. Now, they think that *Hypsilophodon's* feet were perfectly adapted for zooming away from predators. Each foot had four toes which it could splay out to cover a wide area. This made it less likely that it would topple over as it ran.

Is it true that some dinosaurs had webbed feet?

Today's experts think that this is unlikely. Early palaeontologists found imprints of skin between the fossil paws of hadrosaurs. They thought this proved that these dinosaurs had webbed feet like ducks today. But scientists now think that the skin formed a padded cushion under the foot, rather than a web.

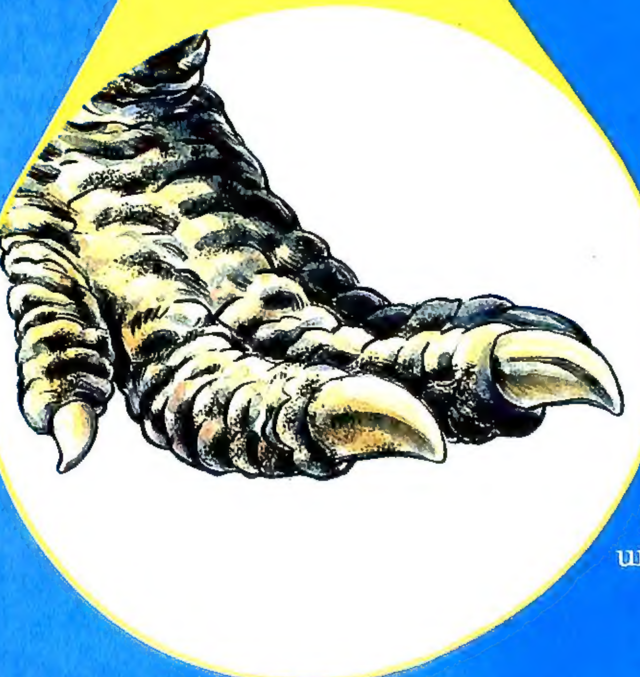
FEET LIKE AN ELEPHANT





Apatosaurus was a relative of the gigantic *Diplodocus*. It weighed 20 tonnes. Each of this giant's massive, pillar-like legs ended in a broad, rounded foot that looked a bit like an elephant's: perfect for preventing it sinking into the ground. The bones in *Apatosaurus'* feet were very strong and splayed out to support the weight of its enormous body.

THE FOUR-TOED TERROR

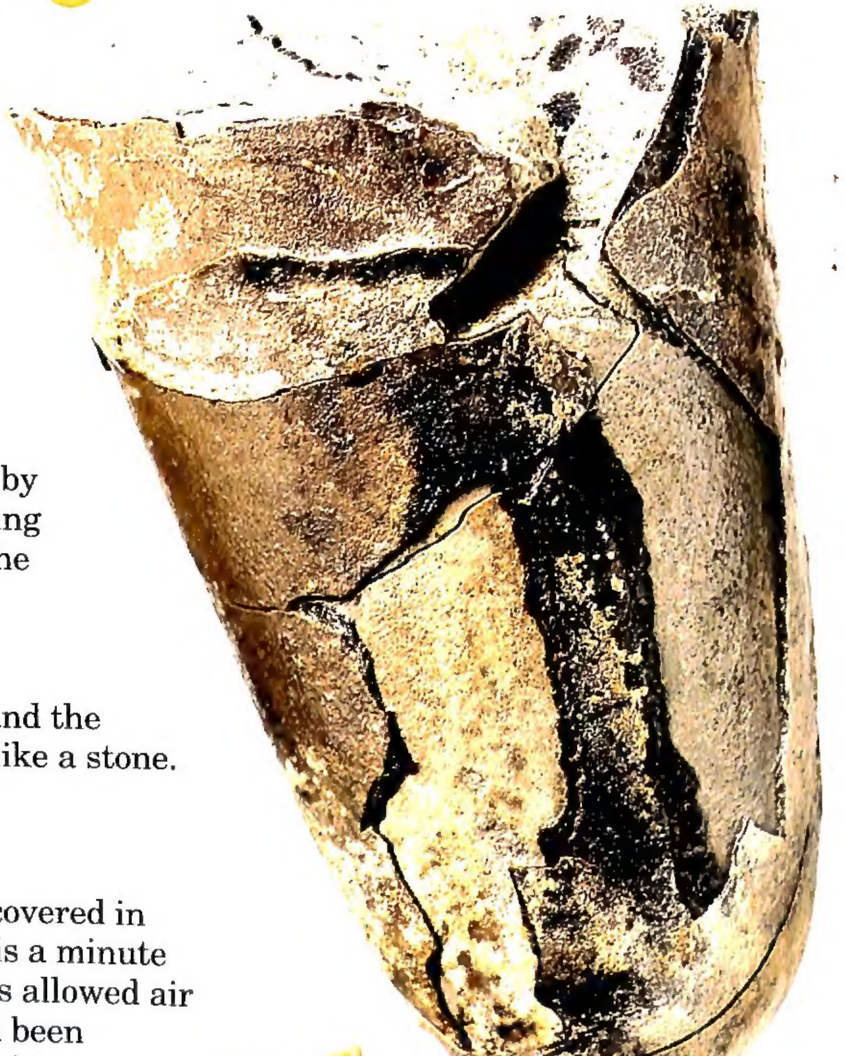


Allosaurus didn't need to sprint away from danger. Usually, it was the danger! Most other dinosaurs did not stand a chance against *Allosaurus'* sharply clawed feet. It had four toes on each foot. One was clawed and pointed backwards, perfect for back-slashing a savage blow into the vulnerable underbelly of its prey. The three other toes were also clawed, but they pointed forwards. It used them to rip its unfortunate victims to pieces.

A mystery solved

One of the great mysteries about dinosaurs was how their young came into the world. And then, one day in the Gobi Desert...

Almost a century after scientists discovered dinosaurs, the experts still did not know how they had their young. In 1922, an expedition to the Gobi Desert, led by Roy Chapman Andrews, made an astonishing discovery. Follow the clues to find out how he solved a great mystery.



CLUE 1

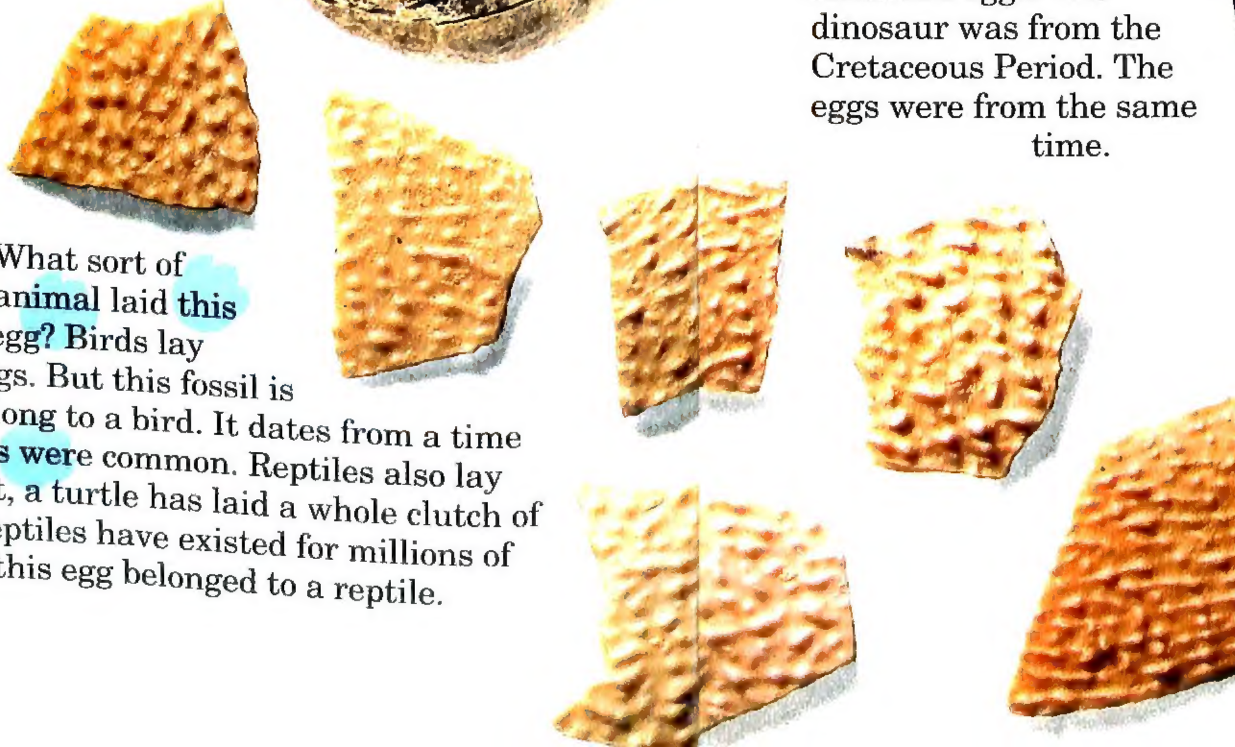
Roy Chapman Andrews found the fossil on the right. It looks like a stone. But is it?

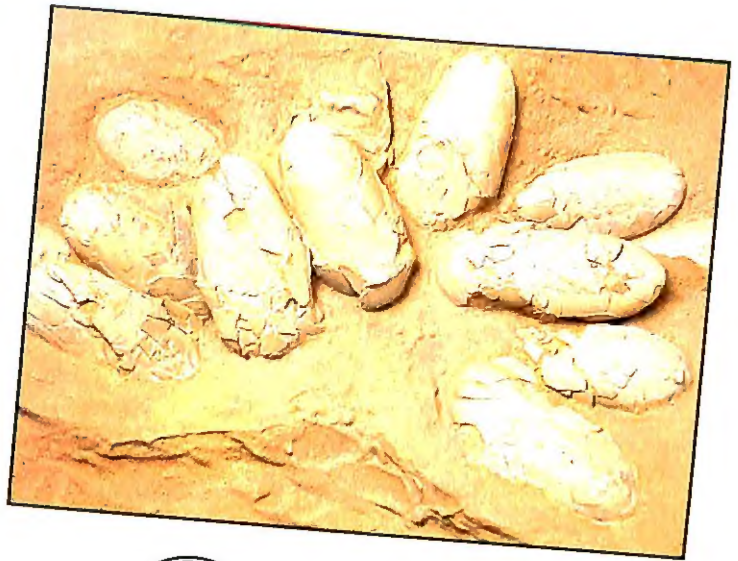
CLUE 2

The surface of the fossil is covered in tiny bumps. In each bump is a minute hole called a pore. The pores allowed air into the object. Whatever had been inside the fossil needed air, so it must have been alive. Question: What is oval in shape and contains something that is alive? Answer: An egg.

CLUE 3

What sort of animal laid this egg? Birds lay eggs. But this fossil is far too old to belong to a bird. It dates from a time long before birds were common. Reptiles also lay eggs. On the left, a turtle has laid a whole clutch of smooth eggs. Reptiles have existed for millions of years. Perhaps this egg belonged to a reptile.





CLUE 4

As well as the fossilized egg and fragments of fossilized eggshell, Roy Chapman Andrews found a number of eggs laid in nests, like the clutch above. This was evidence that the eggs were deliberately laid by a species of animal that always built nests and laid eggs to have its young.

CLUE 5

So what kind of animal laid the eggs, and what tiny creatures hatched out of them? The final clue came when the fossilized bones of small, frilled dinosaurs and their young were found around the nests of the fossilized eggs. The dinosaur was from the Cretaceous Period. The eggs were from the same time.

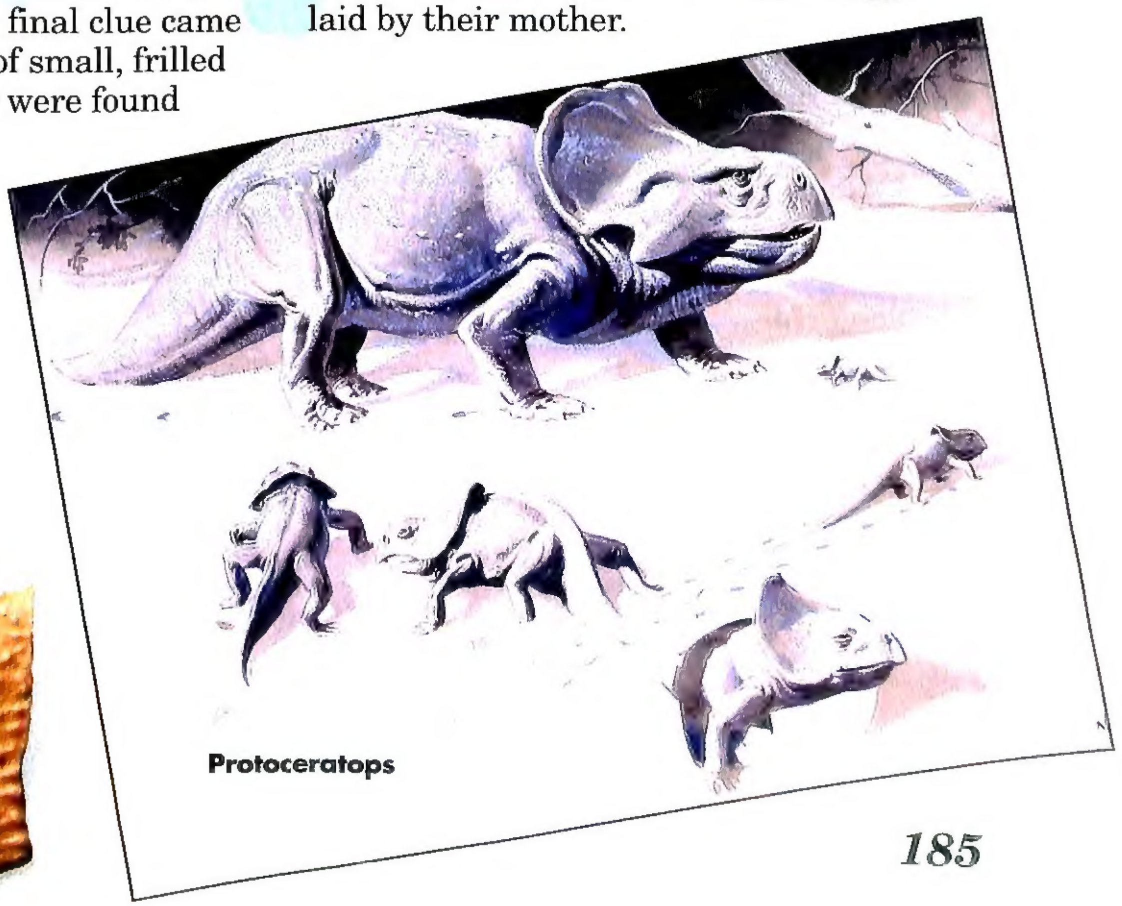
IT'S A FACT

ROY CHAPMAN ANDREWS WAS THE COMPANY COOK

Before he set out on one of his early expeditions to the Gobi Desert, Dr Andrews put himself in charge of skinning, cutting up and cooking all the animals the expedition caught to eat. His wife travelled with him. Number one on their list of plans was: 'To have a thoroughly good time!'

CRACKED IT!

The eggs were laid by *Protoceratops*. So, after 100 years of wondering how dinosaurs gave birth to their young, scientists at last had scientific evidence that baby dinosaurs hatched from eggs laid by their mother.



Protoceratops

The story of an egg

What happened to the dinosaurs' eggs from the time they were laid by their mothers to the time they cracked open?

Reptiles, such as the dinosaurs, lay eggs and the young grow inside them. When they are ready, the young hatch.

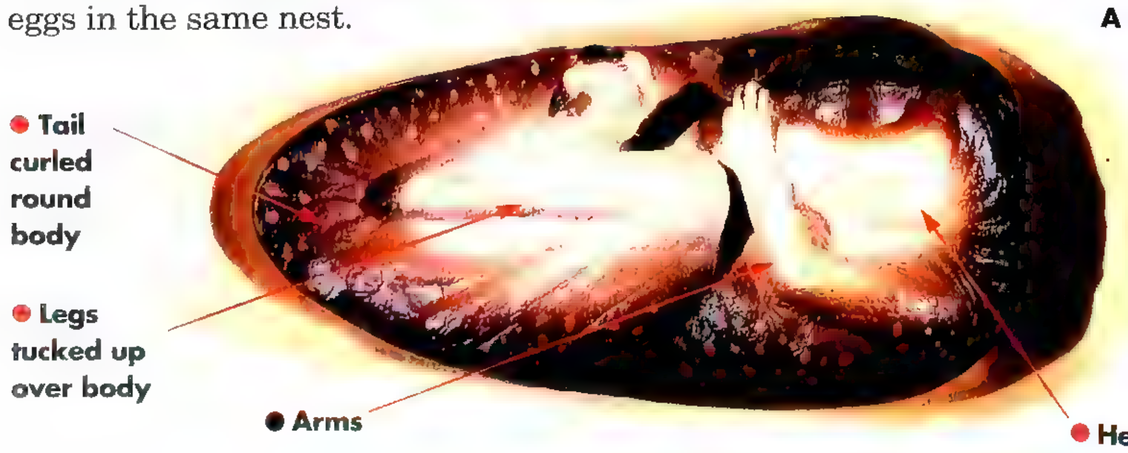
This *Protoceratops* scooped a hollow in the sand then laid her eggs in neat circles.

LAYING EGGS

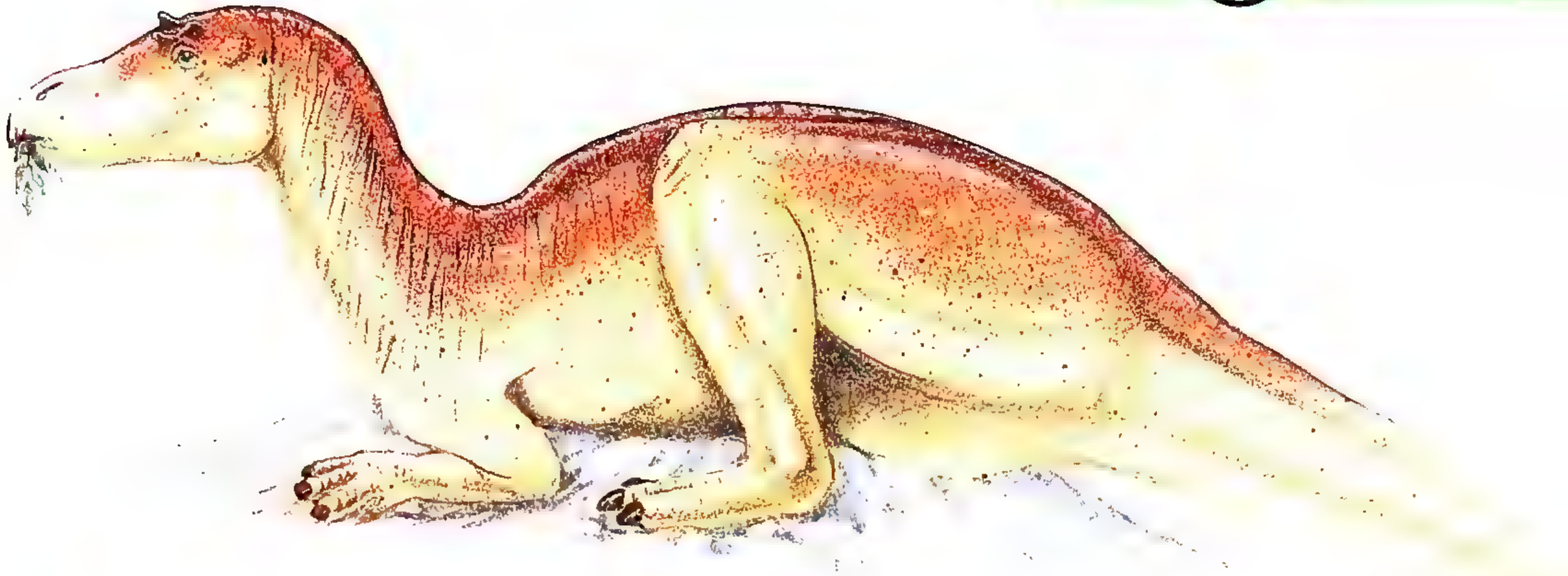
Dinosaurs evolved from animals that could live in water and on land: we call such animals amphibians. Some amphibians lay their eggs in water where the young develop like tadpoles do when they hatch from the eggs in frogs spawn. Reptiles can lay their eggs on land because their eggs have tough shells. Some scientists think that several females may have laid their eggs in the same nest.

THE INSIDE STORY

Inside the egg, the baby dinosaur grew from the moment the egg was fertilized. Scientists call the baby at this stage an embryo. The embryo dinosaur fed off the egg's yoke. At first, it looked nothing like a dinosaur, but by the time it hatched, it looked like a small version of its parents.



A model of an *Orodromeus* embryo neatly folded inside its egg. Scientists have scanned fossil eggs and found embryo bones inside them.



***Maiasaura* mothers laid their eggs in nests. They sat on their nests to keep the eggs warm and help them hatch safely just as today's birds do.**

SAFETY IN NUMBERS

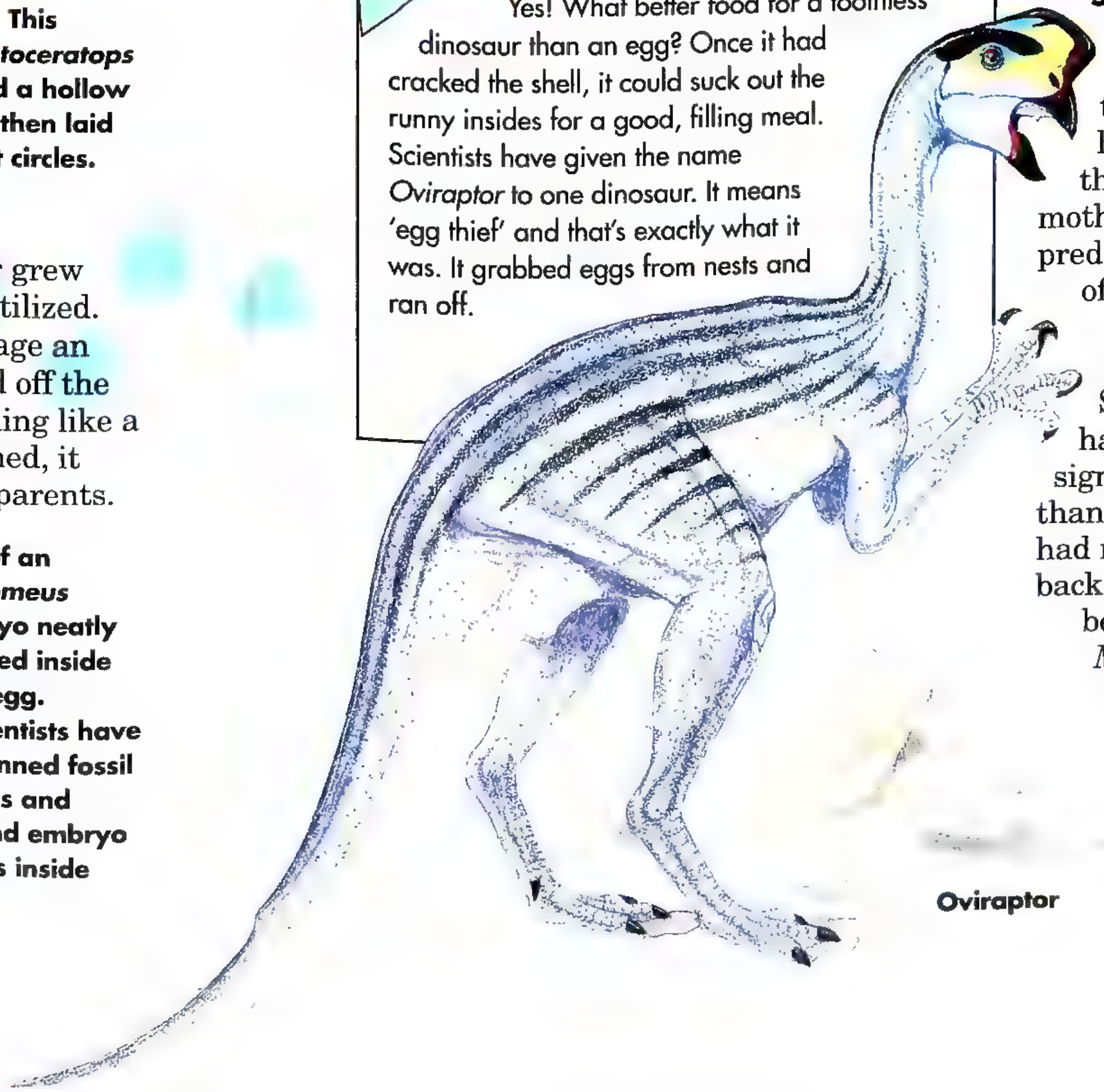
At least one dinosaur, *Maiasaura*, built raised nests that looked like the rim of a tiny volcano. Fossil nests have been found so close to each other that scientists believe that *Maiasaura* mothers stayed together, as a hungry predator was less likely to attack a group of dinosaurs than one on her own.

BACK TO THE SAME SITE

Some nests and fossil remains of hadrosaurs found in the USA show signs that the nests have been used more than once. Experts believe that after they had mated, the mother dinosaurs went back to a nesting site they had used before. They now think that *Maiasaura* sat on their nests in order to keep the eggs warm and hatch them safely. They may even have cared for their young until they were old enough to fend for themselves and survive in the world in which they lived.

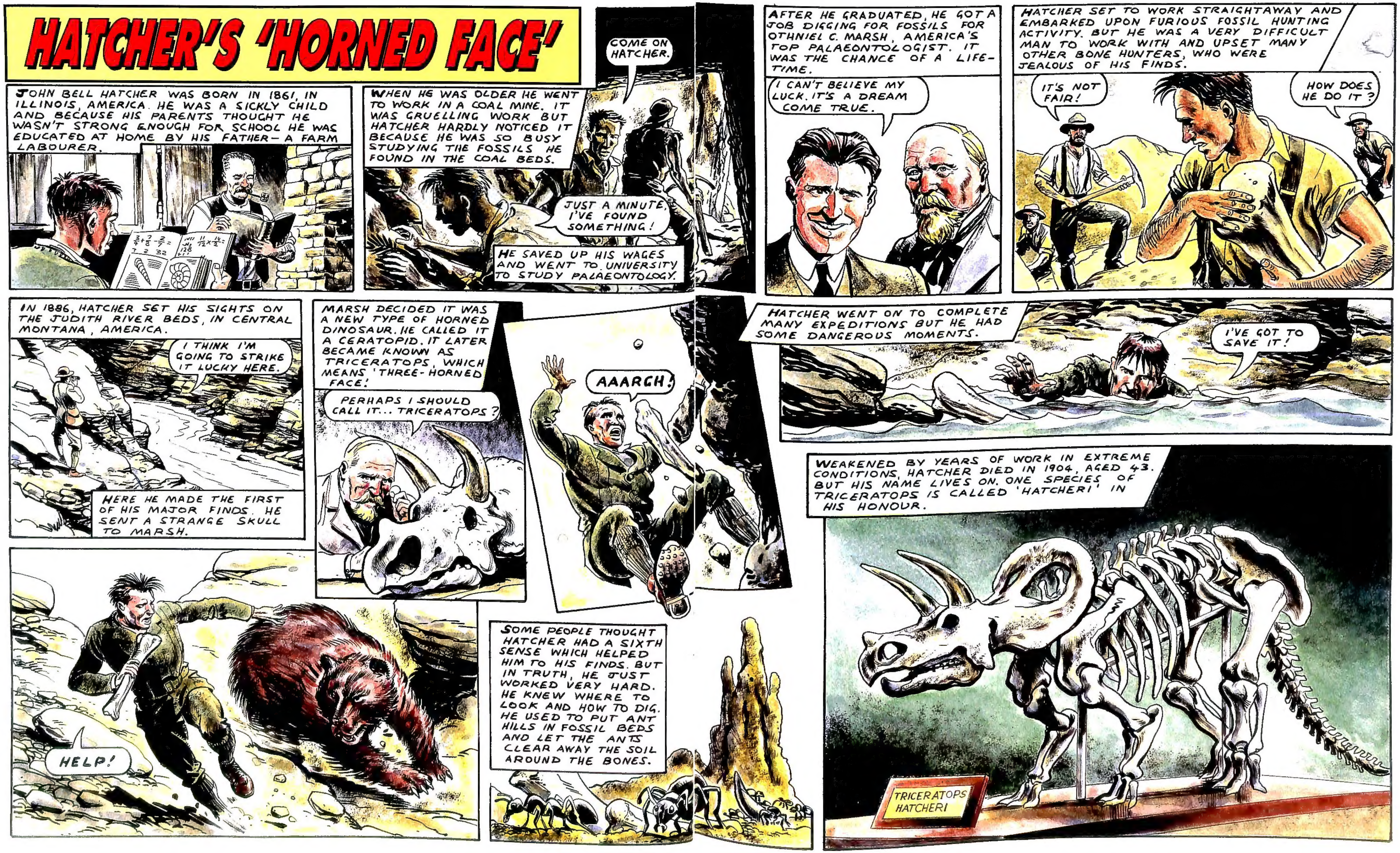
Is it true that some dinosaurs stole other dinosaurs' eggs?

Yes! What better food for a toothless dinosaur than an egg? Once it had cracked the shell, it could suck out the runny insides for a good, filling meal. Scientists have given the name *Oviraptor* to one dinosaur. It means 'egg thief' and that's exactly what it was. It grabbed eggs from nests and ran off.



Oviraptor

HATCHER'S 'HORNED FACE'



JOHN BELL HATCHER WAS BORN IN 1861, IN ILLINOIS, AMERICA. HE WAS A SICKLY CHILD AND BECAUSE HIS PARENTS THOUGHT HE WASN'T STRONG ENOUGH FOR SCHOOL HE WAS EDUCATED AT HOME BY HIS FATHER – A FARM LABOURER.

WHEN HE WAS OLDER HE WENT TO WORK IN A COAL MINE. IT WAS GRUELLING WORK BUT HATCHER HARDLY NOTICED IT BECAUSE HE WAS SO BUSY STUDYING THE FOSSILS HE FOUND IN THE COAL BEDS.

COME ON HATCHER.
JUST A MINUTE, I'VE FOUND SOMETHING!

HE SAVED UP HIS WAGES AND WENT TO UNIVERSITY TO STUDY PALAEONTOLOGY.

AFTER HE GRADUATED, HE GOT A JOB DIGGING FOR FOSSILS FOR OTHNIEL C. MARSH, AMERICA'S TOP PALAEONTOLOGIST. IT WAS THE CHANCE OF A LIFETIME.

HATCHER SET TO WORK STRAIGHTAWAY AND EMBARKED UPON FURIOUS FOSSIL HUNTING ACTIVITY. BUT HE WAS A VERY DIFFICULT MAN TO WORK WITH AND UPSET MANY OTHER BONE HUNTERS, WHO WERE JEALOUS OF HIS FINDS.

IN 1886, HATCHER SET HIS SIGHTS ON THE JUDITH RIVER BEDS, IN CENTRAL MONTANA, AMERICA.

HERE HE MADE THE FIRST OF HIS MAJOR FINDS. HE SENT A STRANGE SKULL TO MARSH.

MARSH DECIDED IT WAS A NEW TYPE OF HORNED DINOSAUR. HE CALLED IT A CERATOPID. IT LATER BECAME KNOWN AS TRICERATOPS, WHICH MEANS 'THREE-HORNED FACE'.

HATCHER WENT ON TO COMPLETE MANY EXPEDITIONS BUT HE HAD SOME DANGEROUS MOMENTS.

SOME PEOPLE THOUGHT HATCHER HAD A SIXTH SENSE WHICH HELPED HIM TO HIS FINDS. BUT IN TRUTH, HE JUST WORKED VERY HARD. HE KNEW WHERE TO LOOK AND HOW TO DIG. HE USED TO PUT ANT HILLS IN FOSSIL BEDS AND LET THE ANTS CLEAR AWAY THE SOIL AROUND THE BONES.

WEAKENED BY YEARS OF WORK IN EXTREME CONDITIONS, HATCHER DIED IN 1904, AGED 43. BUT HIS NAME LIVES ON. ONE SPECIES OF TRICERATOPS IS CALLED 'HATCHERI' IN HIS HONOUR.

Improve and test your knowledge with...

DINO Fact File

Triceratops holds all the answers. See how you score in the quiz.

A dog-gone dinosaur find

There's a 191 million year-old ichthyosaur fossil in Britain's Bridgewater County Museum. The bones, which were encased in slate, were sniffed out by a dog.

Quite a find

In 1947, the fossils of over 100 Coelophysis were discovered at Ghost Ranch in New Mexico, USA.

Stop the rot

When the remains of Apatosaurus were found in North America, experts spotted some fossilized skin. The beast had become covered in very dry soil soon after it died, which had stopped the skin from rotting. It was proof that Apatosaurus' skin was scaly.

Mrs Carnegie's dinosaur

In 1915, a new type of Apatosaurus was found in America's National Dinosaur Site. Scientists called it Apatosaurus Louisa in honour of Louisa Carnegie whose husband had funded the expedition.

1 **Which dinosaur's name means 'terrible claw'?**
a) *Deinonychus*
b) *Tyrannosaurus rex*
c) *Claudiosaurus*

2 **How many fingers did *Tenontosaurus* have on each hand?**
a) three
b) four
c) five

3 **What was *Hylaeosaurus'* main means of defence?**
a) its tongue
b) its claws
c) its spikes

4 **What sort of creature was *Hylonomus*?**
a) a reptile
b) an insect
c) an amphibian

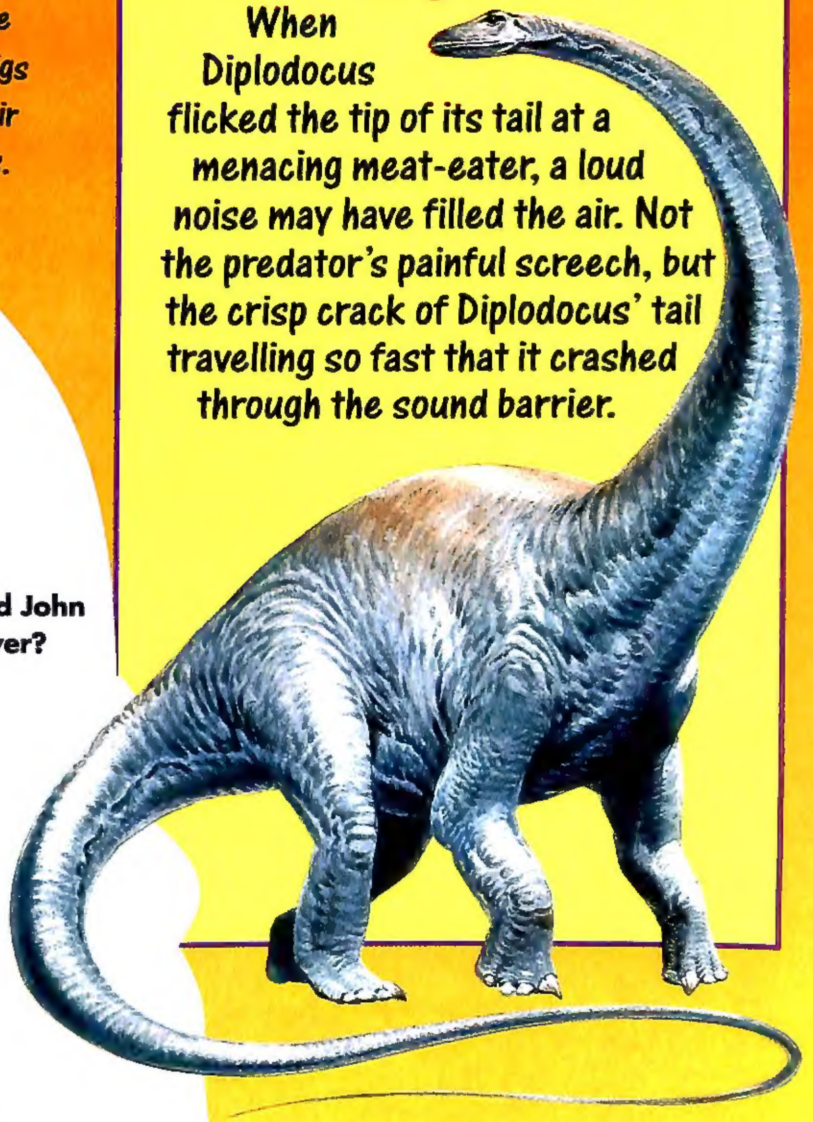
5 **How many neck bones did *Elasmosaurus* have?**
a) over 50
b) over 60
c) over 70

Pining for a snack

Scientists know that pine was on the menu for Anatosaurus and other hadrosaurs, for the fossilized remains of cones, needles and twigs have been found in their stomachs.

Breaking barriers

When Diplodocus flicked the tip of its tail at a menacing meat-eater, a loud noise may have filled the air. Not the predator's painful screech, but the crisp crack of Diplodocus' tail travelling so fast that it crashed through the sound barrier.



6 **Who discovered the first *Protoceratops'* eggs?**
a) Roy Andrews
b) Edward Cope
c) Othniel Marsh

7 **Which dinosaur stole eggs?**
a) *Ornithosuchus*
b) *Oviraptor*
c) *Ouranosaurus*

8 **Which dinosaur did John Bell Hatcher discover?**
a) *Pentaceratops*
b) *Triceratops*
c) *Protoceratops*

9 **What does the name *Carcharodontosaurus* mean?**
a) giant fish reptile
b) giant shark reptile
c) giant whale reptile

10 **During which period did *Cetiosaurus* live?**
a) the Late Jurassic
b) the Early Devonian
c) the Early Cretaceous

On the attack

Dinosaur experts are convinced that some dinosaurs bit their prey with such force that they cut right through the flesh to leave toothmarks on the bones of their victims.

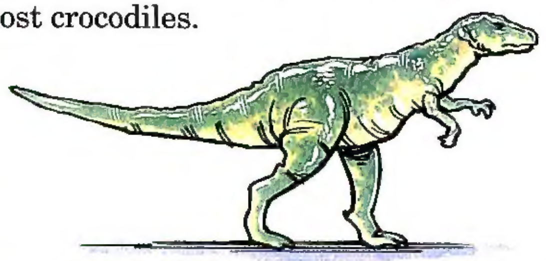
A ring a year

When scientists cut through a large sauropod's bones, they found they were layered, like a tree trunk. And just as they can tell the age of a tree by numbering its rings, some scientists believe that if they count these layers, the total gives a clue to the dinosaur's age.

Answers to the questions on inside back cover

A to Z OF DINOSAURS CA – CE

CARCHARODONTOSAURUS 140 MYA
Fossils of *Carcharodontosaurus* (kar-kar-oh-dont-oh-saw-rus), which means 'giant shark reptile', were first found in 1950 by a French team digging in the Sahara Desert. The creature was 8m long. That's longer than most crocodiles.

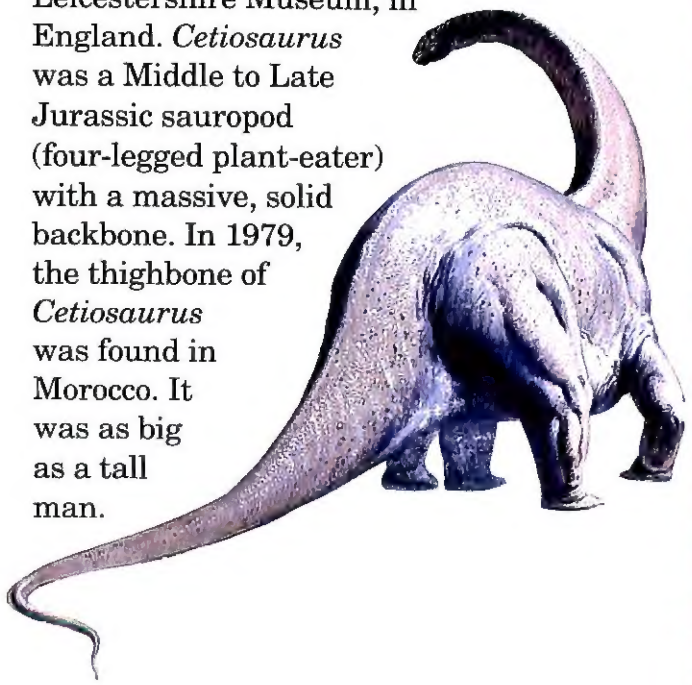


CARNOTAURUS 140 MYA
When scientists found fossils of *Carnotaurus* (karn-oh-toor-us), they discovered that it had odd horns sticking out of its head, just above the eyes, and a short snout. They thought it must have looked like a bull, so they gave it its name, which means 'meat-eating bull'. *Carnotaurus* had a thin body, stumpy arms and long, slim legs.

CERATOSAURUS 160 MYA
A pack of *Ceratosaurus* (ser-a-toe-saw-rus) on the prowl must have been a frightening sight. These beasts were 6m long and could run quickly on their clawed feet. They went for their prey with their sharp claws and ferocious fangs.

CETIOSAURISCUS 160 MYA
Plant-eating *Cetiosauriscus* (seet-ee-oh-saw-risk-us) plodded through prehistoric England during the Late Jurassic Period. *Cetiosauriscus* was about 15m long. Many experts think that it used its long tail to lash out at predators. Its name means 'whale-like reptile'.

CETIOSAURUS 160 MYA
Odd teeth and bits of bones of *Cetiosaurus* (seet-ee-oh-saw-rus) were some of the earliest dinosaur fossils to be discovered. They were unearthed in 1841, near Oxford in southern England. Some years later, a more complete skeleton of this dinosaur was found in Rutland in England. It can be seen in the Leicestershire Museum, in England. *Cetiosaurus* was a Middle to Late Jurassic sauropod (four-legged plant-eater) with a massive, solid backbone. In 1979, the thighbone of *Cetiosaurus* was found in Morocco. It was as big as a tall man.



MYA = MILLION YEARS AGO

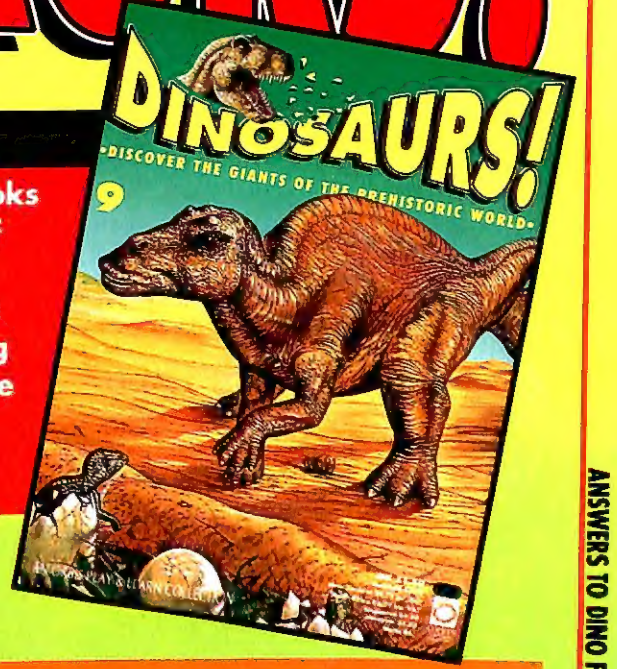
COMING IN PART 9 OF

DINOSAURS!

Meet *Maiasaura*, the 'good mother lizard', in IDENTIKIT. A gentle giant, *Maiasaura* looked after its young from the time that they hatched. PLUS *Herrerasaurus* and *Huayangosaurus*.

PLUS

DINOSAUR WORLD looks at the flying reptiles of the Age of Dinosaurs. AND we take our lives in our hands by asking some dinosaurs to bare their teeth in SPOTTER'S GUIDE.



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START YOUR T REX BODY

Now that you have all the parts for your fabulous glow-in-the-dark skeleton, it's time to start body-building with *T rex*! Kick off with the dinosaur's feet – FREE with next week's issue. The legs, arms, body, head and tail will follow.

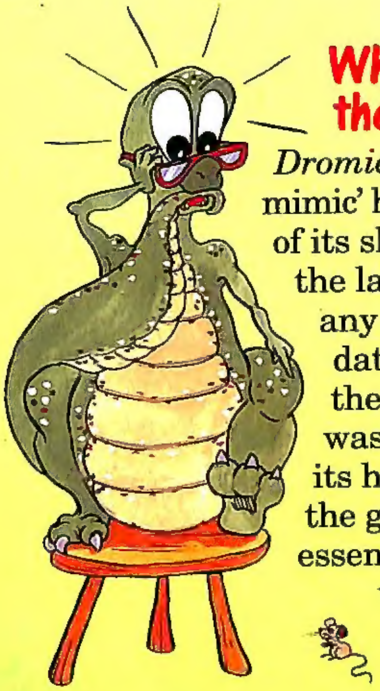
The model is simple to put together, with each part being numbered clearly. And there are easy-to-follow instructions just in case you get stuck. When you have finished your model, you can paint it any colour you like using model paints.

The only problem you'll have is to decide whether you want to build the body on its own or put it together around the skeleton. It's a tough decision to make: one supermodel for your bedroom – or two?

ANSWERS TO DINO FACT FILE QUESTIONS: 1.a 2.c 3.c 4.a 5.c 6.a 7.b 8.b 9.b 10.a

Dr. David Norman of Cambridge University answers your dinosaur questions

ASK THE EXPERT

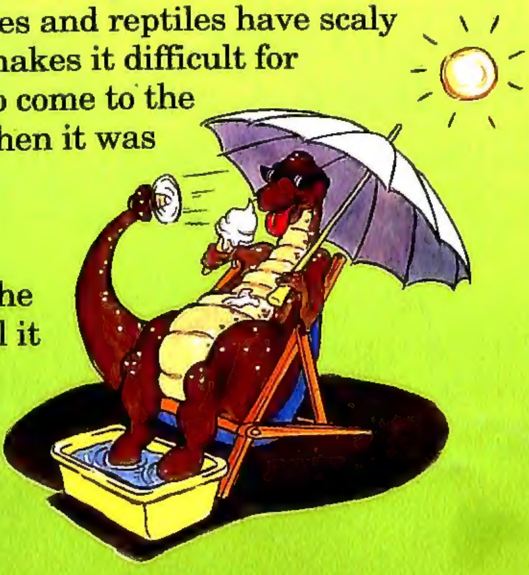


Which dinosaur had the largest eyes?

Dromiceiomimus – the 'emu mimic' had huge eyes. Fossils of its skull show that it had the largest eye sockets of any dinosaur found to date, so it probably had the largest eyes. There was one on each side of its head, which gave it the good, all-round vision essential when keeping a watch out for deadly predators.

Did dinosaurs sweat?

No – dinosaurs did not sweat. Humans sweat. The moisture comes through holes in our skin called pores, but dinosaurs were reptiles and reptiles have scaly skin that makes it difficult for moisture to come to the surface. When it was too hot, dinosaurs probably stayed in the shade until it was cool enough for them to go out again.



What does the word 'reptile' mean?

The word reptile comes from the Latin word *repere*, which means to creep or crawl. The people who first used the word to describe animals like snakes and crocodiles had no idea that dinosaurs had ever existed. We know that dinosaurs were reptiles, but we don't think that any of them was a creeping crawler.

What was the first dinosaur to appear in the world?

Two creatures from Argentina compete for the honour of being the first dinosaur. *Herrerasaurus* and *Eoraptor* were both two-legged meat-eaters. They lived about 230 – 225 million years ago in the Middle Triassic. *Herrerasaurus* was the larger at 3m long. *Eoraptor* was 1m in length and was only found in 1992. The search for fossils goes on, so older dinosaurs may be discovered.

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